

IN THE
UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

No. 06-1343

AMERICAN RADIO RELAY LEAGUE, INC.,

PETITIONER

v.

FEDERAL COMMUNICATIONS COMMISSION
AND
THE UNITED STATES OF AMERICA,

RESPONDENTS

ON PETITION FOR REVIEW OF ORDERS OF THE
FEDERAL COMMUNICATIONS COMMISSION

THOMAS O. BARNETT
ASSISTANT ATTORNEY GENERAL

ROBERT B. NICHOLSON
ROBERT J. WIGGERS
ATTORNEYS

UNITED STATES DEPARTMENT OF JUSTICE
WASHINGTON, D. C. 20530

SAMUEL L. FEDER
GENERAL COUNSEL

JOSEPH R. PALMORE
DEPUTY GENERAL COUNSEL

RICHARD K. WELCH
ASSOCIATE GENERAL COUNSEL

JOHN E. INGLE
DEPUTY ASSOCIATE GENERAL COUNSEL

C. GREY PASH, JR.
COUNSEL

FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D. C. 20554
(202) 418-1740

CERTIFICATE AS TO PARTIES, RULINGS AND RELATED CASES

A. Parties

The parties, intervenors, and amici are listed in the brief of petitioner.

B. Rulings Under Review

Amendment of Part 15 Regarding New Requirements and Measurement Guidelines for Access Broadband Over Power Line Systems, 19 FCC Rcd 21265 (2004) (JA 1), *reconsid. granted in part and denied in part*, 21 FCC Rcd 9308 (2006) (JA 67).

C. Related Cases

The orders on review have not previously been before this Court. Counsel are not aware of any related cases pending in this or any other Court.

TABLE OF CONTENTS

Statement Of The Issues Presented For Review	1
Jurisdiction.....	2
Statutes And Regulations.....	2
Counterstatement Of The Case	2
Counterstatement Of The Facts	4
I. Background.....	4
A. Broadband Internet Access	4
B. Access BPL Technology.....	6
C. Inquiry And Rule Making	9
II. Rules To Govern Access BPL.....	12
A. Limiting BPL Interference Potential.....	13
B. Notification And Database Requirement.....	16
C. New Requirements For Access BPL Equipment Authorization.....	16
III. Action On Reconsideration.....	17
Summary Of Argument.....	19
Argument	22
I. Standard Of Review.....	22
II. The Rules For Access BPL Operations Are Reasonable And Consistent With The Communications Act And Commission Precedent.....	23
A. The Rules Are Consistent With The Communications Act.	23
B. The Rules Continue To Protect Amateur Mobile Operations From Harmful Interference.....	29
C. Technical Judgments That The Commission Made In Adopting The Rules Were Reasonable.	32
D. The Commission Properly Concluded That Access BPL Systems Are Subject To Regulation Under Section 302 Of The Communications Act.	36

E. The Commission Acted Reasonably In Deciding Not To Restrict Access BPL Operations To A Small Portion Of The Spectrum In Question.....	39
III. The FCC Adequately Disclosed In The Record Data Upon Which It Relied In Adopting The BPL Rules.	42
Conclusion	47

TABLE OF AUTHORITIES

Cases

* <i>Air Transp. Ass’n v. CAB</i> , 732 F.2d 219 (D.C.Cir. 1983)	46
<i>Air Transp. Ass’n v. FAA</i> , 169 F.3d 1 (D.C.Cir. 1999).....	45
<i>American Iron & Steel Inst. v. EPA</i> , 115 F.3d 979 (D.C.Cir. 1999).....	34
* <i>Association Of Public-Safety Communications Officials-Int’l, Inc. v. FCC</i> , 76 F.3d 395 (D.C.Cir. 1996)	41
<i>AT&T Wireless Services, Inc. v. FCC</i> , 270 F.3d 959 (D.C.Cir. 2001)	38
<i>Bechtel v. FCC</i> , 957 F.2d 873 (1992)	31
* <i>Cellco Partnership v. FCC</i> , 357 F.3d 88 (D.C.Cir 2004).....	36
* <i>Chevron U.S.A., Inc. v. Natural Resources Defense Council</i> , 467 U.S 837 (1984)	22
<i>Connecticut Light and Power Co. v. NRC</i> , 673 F.2d 525 (D.C.Cir.), cert. denied, 459 U.S. 835 (1982)	21, 43
<i>Consumer Electronics Ass’n v. FCC</i> , 347 F.3d 291 (D.C.Cir. 2003).....	22
* <i>Echostar Satellite LLC v. FCC</i> , 457 F.3d 31 (D.C.Cir. 2006).....	45
<i>FCC v. NCCB</i> , 436 U.S. 775 (1978).....	42
* <i>FCC v. WNCN Listeners Guild</i> , 450 U.S. 582 (1981)	31, 42
* <i>Hispanic Information & Telecommunications Network v. FCC</i> , 865 F.2d 1289 (D.C.Cir. 1989)	22, 31
<i>In re Core Communications, Inc.</i> , 455 F.3d 267 (D.C.Cir. 2006)	37
* <i>MCI Cellular Telephone Co. v. FCC</i> , 738 F.2d 1322 (D.C.Cir. 1984)	22, 34
<i>Mobile Relay Associates v. FCC</i> , 457 F.3d 1 (D.C.Cir. 2006)	31, 41
<i>Motor Vehicle Mfrs. Ass’n v. State Farm Mutual Ins. Co.</i> , 463 U.S. 29 (1983).....	22
<i>National Cable & Tel. Ass’n v. Brand X Internet Serv.</i> , 545 U.S. 967 (2005)	5
<i>National R.R. Passenger Corp. v. Boston & Maine Corp.</i> , 503 U.S. 407 (1992).....	23
<i>Nstar Elec. & Gas Corp. v. FERC</i> , 481 F.3d 794 (D.C.Cir. 2007)	46
* <i>Qwest Corp. v. FCC</i> , 482 F.3d 471 (D.C.Cir 2007)	36
<i>Teledesic LLC v. FCC</i> , 275 F.3d 75 (D.C.Cir. 2001)	42

Administrative Decisions

* <i>Amendment Of Part 15 Of The Commission's Rules To Allow Certification Of Equipment In The 24.05 - 24.25 Ghz Band</i> , 16 FCC Rcd 22337 (2001)	27, 38
---	--------

<i>Appropriate Framework for Broadband Access to the Internet Over Wireline Facilities</i> , 20 FCC Rcd 14853 (2005), <i>pet. for rev. pending</i> , <i>Time Warner Telecom v. FCC</i> , No. 05-4769 (3d Cir., argued Mar. 16, 2007).....	5
<i>Inquiry Concerning the Deployment of Advanced Telecommunications Capability</i> , 22 FCC Rcd 7816, 7817 n. 4 (2007)	5
<i>Modification Of Parts 2 And 15 Of The Commission’s Rules For Unlicensed Devices And Equipment Approval</i> , 19 FCC Rcd 13539 (2004).....	24
* <i>Revision of Part 15 of the Commission’s Rules Regarding Ultra-Wideband Transmission Systems</i> , 19 FCC Rcd 24558 (2004).....	23, 24, 28
<i>Revision of Part 15</i> , 4 FCC Rcd 3493 (1989).....	28

Statutes and Regulations

28 U.S.C. § 2342(1)	2
47 C.F.R. § 0.461(j)	44
* 47 C.F.R. § 15.1(a).....	24
* 47 C.F.R. § 15.1(b)	24, 38
47 C.F.R. § 15.101(a).....	7, 13
47 C.F.R. § 15.101(f)	7
47 C.F.R. § 15.107(a)-(c).....	7
47 C.F.R. § 15.109(a).....	7
47 C.F.R. § 15.109(b)	7
47 C.F.R. § 15.109(e).....	7
47 C.F.R. § 15.109(g)	7
47 C.F.R. § 15.201(a).....	7
47 C.F.R. § 15.207(c).....	7
47 C.F.R. § 15.209(a).....	7
47 C.F.R. § 15.221	7
47 C.F.R. § 15.3(ff).....	39
* 47 C.F.R. § 15.3(m)	25, 31
47 C.F.R. § 15.31(d)	7
47 C.F.R. § 15.31(f)	7
* 47 C.F.R. § 15.31(f)(2)	33
47 C.F.R. § 15.31(g)	7
47 C.F.R. § 15.31(h)	7
* 47 C.F.R. § 15.5	7

47 C.F.R. § 15.611(b)	12
47 C.F.R. § 15.611(c).....	12
47 C.F.R. § 15.611(c)(1)(iii).....	18, 30
47 C.F.R. § 2.1	15
47 C.F.R. § 2.1(c).....	25
47 C.F.R. §§ 15.3(f)	7
47 C.F.R. § 15.33(b)(2).....	7
47 U.S.C. § 155(c)(4).....	44
* 47 U.S.C. § 301	23, 25, 37, 39
* 47 U.S.C. § 302a(a).....	18, 20, 36, 38
47 U.S.C. § 302a(a)(1)	37
47 U.S.C. § 402(a)	2
* 47 U.S.C. § 405.....	2, 36
47 U.S.C. § 157(note)[Section 706 of the Telecommunications Act of 1996].....	5, 20, 42
5 U.S.C. § 553(b)	43
5 U.S.C. § 553(c)	43
5 U.S.C. § 706(2)(A).....	22

Others

<i>Telecommunications: Broadband Deployment</i> (GAO May 2006)	4
--	---

** Authorities principally relied upon are marked with asterisks.*

GLOSSARY

BPL	broadband over power lines
db	decibel, a measure of signal strength
GHz	gigahertz – a measure of frequency equivalent to 1,000,000,000 cycles per second
kHz	kilohertz – a measure of frequency equivalent to 1,000 cycles per second
MHz	megahertz – a measure of frequency equivalent to 1,000,000 cycles per second
NTIA	National Telecommunications and Information Administration
OET	FCC Office of Engineering and Technology

IN THE
UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

No. 06-1343

AMERICAN RADIO RELAY LEAGUE, INC.,

PETITIONER

v.

FEDERAL COMMUNICATIONS COMMISSION
AND
THE UNITED STATES OF AMERICA,

RESPONDENTS

ON PETITION FOR REVIEW OF ORDERS OF THE
FEDERAL COMMUNICATIONS COMMISSION

BRIEF FOR RESPONDENTS

STATEMENT OF THE ISSUES PRESENTED FOR REVIEW

1. Whether the FCC acted reasonably and within its statutory authority in adopting rules that are intended to encourage development of high-speed Internet access over electric power lines as an unlicensed service under Part 15 of its rules while continuing to protect licensed users from harmful interference from such operations.

2. Whether the determinations that the FCC made in adopting technical and operational restrictions and procedures governing this service were within the agency's broad discretion in a highly technical area.

3. Whether the FCC adequately identified and made available technical studies and data it used in reaching its decision in compliance with the Administrative Procedure Act.

JURISDICTION

With the exception of those claims not presented to the FCC and thus barred by 47 U.S.C. 405, the Court has jurisdiction pursuant to 47 U.S.C. 402(a) and 28 U.S.C. 2342(1).

STATUTES AND REGULATIONS

Pertinent statutes and regulations are set out in the Statutory Appendix to this brief.

COUNTERSTATEMENT OF THE CASE

This case arises from an inquiry and subsequent rule making proceeding in which the FCC adopted rules governing a technology known as Access Broadband Over Power Line (“Access BPL”). The Commission concluded that Access BPL would promote the availability of access to high-speed internet, or broadband, services to all Americans and increase competition in the broadband access industry. In order to protect licensed services from harmful interference by unlicensed Access BPL providers, the Commission both maintained existing protections and adopted additional protective measures applied uniquely to this new technology. The Commission found that these steps would ensure that it will not be a source of harmful interference to licensed radio services.

Prior to the proceeding in this case, Access BPL operations were permitted by longstanding FCC rules that govern devices that unintentionally emit radio frequency (RF) energy, and some of those operations already were in place and offering service.

The Commission in this proceeding retained existing technical limitations on the power emitted by devices used to provide Access BPL and added new technical and operational restrictions and procedures to protect critical public safety and U.S. government services, as well as other licensed services (including the amateur radio service) in order to mitigate potential harmful interference from Access BPL. These additional protective measures – unique to Access BPL service – include requiring BPL operators: (1) to have the ability, from a central location, to reduce their operating power or modify their operating frequencies, or to shut down segments of their operations entirely in order to address local complaints of harmful interference; (2) to consult with public safety organizations before beginning Access BPL operations; (3) to avoid operating on certain frequencies and in certain geographic areas to protect particular licensed operations; and (4) to establish a nationwide database of Access BPL operating locations to make it easier to identify sources of interference. The new rules also establish extensive measurement procedures to ensure compliance with the rules and impose strict requirements for certifying the equipment that is used with Access BPL operations.

With respect to amateur radio operations, the Commission acknowledged the “historic and ongoing importance of the amateur radio service” and emphasized that it would “not allow harmful interference to such users to persist.” ([*Reconsid. Order* ¶35] JA 75). However, the Commission found no requirement in the Communications Act or in its rules that it provide amateurs with what one commenter described as the “near-absolute interference protection” that they sought. ([*Id.* at ¶45] JA 77).¹ Dissatisfied with

¹ See Current Recon Opp. 3 (JA 671); see also ARRL Recon. Pet. at 15 (FCC obligated to establish rules for Access BPL that make the likelihood of harmful interference to licensed amateur radio operators “virtually nil.” (JA 618); ARRL Reply to Recon. Opp at 5 (JA 687) (footnote continued on following page)

the FCC's protections against harmful interference, petitioner ARRL now asks the Court to set aside the FCC's orders and upset the Commission's efforts to increase competition and promote consumer access to broadband services.

COUNTERSTATEMENT OF THE FACTS

I. BACKGROUND

A. Broadband Internet Access

Internet access was widely available to residential users by the mid 1990s. At first, the primary means of access was a dial-up connection, using a standard telephone line to make an Internet connection. A dial-up connection offers data transmission speeds up to 56 kilobits per second (Kbps). Broadband, or high-speed Internet access, which became available by the late 1990s, is superior to a dial-up connection in important ways. First, broadband offers higher-speed connections, some of them exceeding 1 million bits per second (Mbps). These higher speeds enable consumers to receive information much faster, permitting certain applications to be used and content to be accessed that might not be possible with dial-up. Second, broadband provides an "always-on" connection to the Internet, so that a user does not have to establish a connection to the Internet service provider each time he wants to go online. *See Telecommunications: Broadband Deployment* at 6-9 (GAO May 2006). Broadband connections are available principally via cable modem service (provided by cable television companies) and digital subscriber line (DSL) service (provided over local telephone networks on capacity that is not used by traditional voice service).

(footnote continued from preceding page)

("The future possible public benefits in unlicensed BPL systems are irrelevant under Section 301.").

In section 706 of the Telecommunications Act of 1996, 47 U.S.C. 157(note), Congress directed the Commission and the states to encourage the deployment of advanced telecommunications capability to all Americans.² Congress instructed the Commission to conduct regular inquiries concerning the availability of advanced telecommunications capability.³ In so doing, Congress recognized that broadband or advanced services are critical to the future of the nation.

Responding to this Congressional mandate, the Commission has taken numerous actions in recent years to encourage deployment of broadband facilities and services throughout the United States.⁴ The Commission recently pointed out that broadband services “have already played a vital role in the nation’s economy and the lives of its people,” including various facets of business operations, job creation and providing “greater flexibility and opportunity in the workplace.” *2007 Advanced Telecommunications Inquiry*, 22 FCC Rcd at 7816-17. Broadband services, the Commission observed, also “improve the educational opportunities of children and adults everywhere” as well as “save lives and improve the standard of healthcare in sparsely populated, rural areas.” *Id.*

² Congress specified that the term “advanced telecommunications capability” is defined “without regard to any transmission media or technology, as high-speed, switched, broadband telecommunications capability that enables users to originate and receive high-quality voice, data, graphics, and video telecommunications using any technology.” *See* Telecommunications Act of 1996, Pub.L. No. 104-104, § 706(c), 110 Stat. 56 (1996), 47 U.S.C. 157(note) (emphasis added).

³ *Inquiry Concerning the Deployment of Advanced Telecommunications Capability*, 22 FCC Rcd 7816, 7817 n. 4 (2007)(citing FCC inquiries conducted in response to Section 706).

⁴ *See, e.g., National Cable & Tel. Ass’n v. Brand X Internet Serv.*, 545 U.S. 967 (2005)(affirming FCC’s regulatory classification of cable modem service); *Appropriate Framework for Broadband Access to the Internet Over Wireline Facilities*, 20 FCC Rcd 14853 (2005), *pet. for rev. pending*, *Time Warner Telecom v. FCC*, No. 05-4769 (3d Cir., argued Mar. 16, 2007)(regulatory classification of DSL service).

With specific reference to the role of Access BPL in providing a competing platform for broadband Internet access, the Commission noted that “the open market for such services provides competition that both makes services affordable and provides incentives for quality service and innovation in new technologies and features.”⁵ As the Commission’s chairman said at the time of the adoption of the *Reconsideration Order*, “[t]his technology holds great promise as a ubiquitous broadband solution that would offer a viable alternative to cable, digital subscriber line, fiber, and wireless broadband solutions. ... Promoting the deployment of broadband continues to be one of our top priorities....”⁶ Other commissioners had made a similar point when the Access BPL rules were first adopted. *See Report & Order*, 19 FCC Rcd at 21344 (JA 62)(Joint Statement of Chairman Powell and Commissioner Abernathy) (“BPL provides us with a new potential competitor in the broadband market. BPL technology also holds promise in improving the provision and management of electric power systems, homeland security, and protecting vital elements of the Nation’s critical infrastructure.”).

B. Access BPL Technology

Carrier current systems use electric power lines to carry communications by coupling very low power radio frequency (RF) signals onto the electric wiring.⁷ These systems have included amplitude modulated (AM) radio systems on school campuses and

⁵ *Inquiry Regarding Carrier Current Systems, Including Broadband Over Power Line Systems*, 19 FCC Rcd 21265, 21271 ¶12 (2004)(“*Report & Order*”) (JA 4).

⁶ *Amendment of Part 15 Regarding New Requirements and Measurement Guidelines for Access Broadband of Power Line Systems*, 21 FCC Rcd 9308, 9340 (2006)(“*Reconsid. Order*”)(JA 95)(Statement of Chairman Martin).

⁷ A carrier current system is defined as a system, or part of a system, that transmits radio frequency energy by conduction over an electric power line to a receiver that is connected to the same power line. *See* 47 C.F.R. § 15.3(f).

devices intended for the home, such as intercom systems and remote controls for electrical appliances and lamps. Carrier current systems operate on an unlicensed basis under Part 15 of the Commission's rules.⁸ As a general condition of operation, Part 15 devices (including carrier current systems that use those devices) may not cause harmful interference to authorized radio services and must accept any interference that they receive from other services. 47 C.F.R. § 15.5.

Until recently, carrier current devices generally operated on frequencies below 2 MHz and with relatively limited communications capabilities. In the last few years, the availability of faster digital processing capabilities and other technical advances have allowed the development of new designs for carrier current devices that are capable of overcoming earlier technical limitations. *See Inquiry Regarding Carrier Current Systems, Including Broadband Over Power Line Systems*, 18 FCC Rcd 8498, 8499 ¶¶3-7 (2003) (JA 97) (“*NOR*”).

The new low-power, unlicensed BPL systems are capable of providing high-speed digital communications by coupling RF energy either onto the power lines inside a building (“In-House BPL”) or onto medium-voltage power delivery lines (“Access BPL”).⁹ In-House BPL systems use the electrical outlets available within a building to transfer information between computers and between other home electronic devices,

⁸ See 47 C.F.R. §§ 15.3(f), 15.5, 15.31(d), (f), (g) and (h), 15.33(b)(2), 15.101(a) and (f), 15.107(a)-(c), 15.109(a), (b), (e) and (g), 15.201(a), 15.207(c), 15.209(a) and 15.221.

⁹ In-House BPL uses the electrical wiring inside a residence or business to carry information within a structure. Access BPL typically uses medium-voltage exterior power distribution network lines as a transmission medium to bring high-speed communications services, *e.g.*, the Internet and other broadband services, to distribution facilities in neighborhoods from where they are delivered to users. *See Report & Order*, 19 FCC Rcd at 21267 n.6 (JA 37).

eliminating the need to install additional wires between devices and hence facilitating the implementation of home networks. Access BPL systems deliver high-speed Internet and other broadband services to homes and businesses. In addition, electric utility companies can use Access BPL systems to monitor, and thereby more effectively manage, their electric power distribution operations.¹⁰ Because Access BPL capability can be made available in conjunction with the delivery of electric power, it has the potential to provide an effective means for “last-mile” delivery of broadband services to homes and businesses and may offer a competitive alternative to digital subscriber line (DSL), cable modem services and other high-speed Internet access technologies. *See In the Matter of Carrier Current Systems, Including Broadband Over Power Line Systems And Amendment Of Part 15 Regarding New Requirements And Measurement Guidelines For Access Broadband Over Power Line Systems*, 19 FCC Rcd 3335 (2004) (JA 127) (“NPRM”).

Access BPL systems carry high-speed data signals to neighborhoods from a point where there is a connection to a telecommunications network. The point of network connection may be at a power substation or at an intermediate point between a substation and network terminations, depending on the network topology. Typically, the medium-voltage lines are carried overhead on distribution poles or tower mountings; in a large number of locations and in many newer subdivisions and neighborhoods, these lines are enclosed in underground conduits and the distribution transformers are mounted above ground on a pad, inside a metal housing.

¹⁰ *See Report & Order*, 19 FCC Rcd at 21272 ¶15 (JA 4)(describing wide variety of power distribution applications that electric utilities are planning for Access BPL technology).

Because electric power lines are not shielded, portions of any RF energy that they may carry can be radiated and potentially cause interference to radio operations. Power distribution management devices, such as transformers, and the underground placement of lines that many electric utility systems use tend to diminish radiations of RF energy from this source. But the potential for radiation of RF energy from utility systems that carry RF signals nonetheless remains. Licensed radio systems using the same frequency bands as those on which local Access BPL signals are transmitted could possibly receive harmful interference from such “signal leakage” if adequate safeguards are not in place. *NOI*, 18 FCC Rcd at 8499 ¶5 (JA 98).

Most Access BPL systems that are currently deployed operate in the range from 2 MHz to 50 MHz, with very low-power signals that are spread over a broad range of frequencies. These frequencies are also used by licensed radio services that must be protected from harmful interference under the Commission’s Part 15 rules for unlicensed devices. In the radio spectrum below 50 MHz, incumbent authorized radio services include fixed, land mobile, aeronautical mobile, maritime mobile, radiolocation, broadcast radio, amateur radio terrestrial and satellite, and radio-astronomy. Users of this spectrum include public safety and Federal government agencies, aeronautical navigation licensees, amateur radio operators, international broadcasting stations, and citizens band radio operators. *See NPRM*, 19 FCC Rcd at 3337 ¶5 (JA 128).

C. Inquiry and Rule Making

Recognizing the significant potential of Access BPL for broadband access and competition, the Commission issued a *Notice of Inquiry* on BPL technologies and

systems in April 2003.¹¹ The Commission solicited comments relevant to a review of its Part 15 rules to encourage the deployment of BPL systems while ensuring protection to licensed services. On the basis of comments it received in response to the *Inquiry*, the Commission in February 2004 issued a *Notice of Proposed Rule Making*, in which it proposed rules for Access BPL systems that were intended (1) to remove regulatory uncertainty for BPL operators, thereby facilitating the introduction and use of this promising new technology, and (2) to ensure that licensed services would be protected from harmful interference by BPL operations.¹²

In the *NPRM*, the Commission recognized the potential of Access BPL as a method of delivery of broadband services to residential, institutional, and commercial users. The Commission noted that Access BPL was being developed worldwide, and stated that the deployment of this technology in the United States will support globalization of products and services, promote continued U.S. leadership in broadband technology, and bring important benefits to the American public. 19 FCC Rcd at 3347 ¶30 and n.87 (JA 133, 142). The Commission sought comments on proposals in five broad areas: (1) a definition of Access BPL; (2) Part 15 emissions limits for Access BPL; (3) additional technical and operational requirements for interference mitigation and resolution; (4) notification of Access BPL locations and operational characteristics in a database to facilitate interference mitigation and avoidance measures; and (5) appropriate

¹¹ See *Inquiry Regarding Carrier Current Systems, Including Broadband Over Power Line Systems*, 18 FCC Rcd 8498 (2003) (JA 97).

¹² See *In the Matter of Carrier Current Systems, Including Broadband Over Power Line Systems And Amendment Of Part 15 Regarding New Requirements And Measurement Guidelines For Access Broadband Over Power Line Systems*, 19 FCC Rcd 3335 (2004) (JA 127) .

measurement procedures to assess Access BPL emissions and emissions from other carrier current systems. *Id.* at 3348 ¶31 (JA 133).

The Commission received more than a thousand comments and replies in response to the *NPRM*. The National Telecommunications and Information Administration (NTIA) submitted an extensive study on the interference potential of Access BPL systems to federal government systems.¹³ NTIA, an entity within the Department of Commerce, is the agency principally charged with the development of Executive Branch telecommunications policy. NTIA also manages the Federal use of spectrum; performs telecommunications research and engineering, including resolving technical telecommunications issues for the Federal government and private sector; and administers infrastructure and public telecommunications facilities grants.¹⁴

The NTIA study helped confirm the localized nature of potential harmful interference and determined that emissions from the widespread deployment of Access BPL devices on electric power lines would not increase interference risks to users of other licensed services using the same spectrum. NTIA later submitted formal comments accompanied by a Technical Appendix. *See* NTIA Comments (JA 333). NTIA focused on the need for rules that address both harmful interference concerns and BPL operational requirements. It urged the Commission to adopt rules that would enable BPL proponents (1) to develop and implement design features and operating practices for addressing

¹³ *See* NTIA Report 04-413, *Potential Interference From Broadband Over Power Line (BPL) Systems To Federal Government Radiocommunications at 1.7-80 MHz, Phase 1 Study, Volume I*, National Telecommunications and Information Administration, filed April 27, 2004 (JA 153).

¹⁴ *See* <http://www.ntia.doc.gov/ntiahome/aboutntia/aboutntia.htm>

harmful interference concerns and (2) to obtain new equipment authorizations so as “to contribute significantly toward fulfillment of the President’s vision for universal affordable broadband Internet access.” NTIA Comm. at iv (JA 336).

II. RULES TO GOVERN ACCESS BPL

In its October 2004 *Report and Order*, the Commission recognized the benefits that BPL technology offers in extending broadband access to homes and businesses and introducing additional competition to existing broadband services, such as cable modem and DSL services. *Inquiry Regarding Carrier Current Systems, Including Broadband Over Power Line Systems*, 19 FCC Rcd 21265, 21271 ¶¶12-14 (2004) (JA 4). It also recognized that BPL devices had the potential to cause harmful interference to licensed services and other important radio operations, and stated its “intention to ensure that Access BPL operations do not become a source of harmful interference to licensed radio services.” *Id.* at 21275 ¶23 (JA 6). The Commission established technical standards, operating restrictions and measurement procedures for Access BPL to minimize instances of harmful interference and to facilitate the resolution of such interference where it might occur.

The rules require Access BPL systems to comply with the existing Part 15 radiated emission limits for carrier current systems operating as unintentional radiators. *Report & Order*, 19 FCC Rcd at 21279 ¶¶33-34 (JA 9); *see* 47 C.F.R. § 15.611(b). In addition, the rules require that Access BPL systems incorporate capabilities to modify their operations remotely to avoid using a specific frequency and to reduce power by certain levels in specific locations, and to shut down any unit that is causing harmful interference. *Id.* at 21291 ¶¶58-60 (JA 16); *see* 47 C.F.R. § 15.611(c). The rules also require these systems to

avoid operating in certain “excluded” frequency bands and geographic locations in order to protect sensitive and critical operations such as U.S. Coast Guard and maritime public coast stations and radio astronomy receive stations. *Id.* at 21287 ¶¶49-50 (JA 14); *see* 47 C.F.R. § 15.615(e) and (f). The rules require the BPL industry to establish a publicly available database containing certain information that permits interference identification and resolution. *Id.* at 21300 ¶¶83-87 (JA 22); *see* 47 C.F.R. § 15.615(a). In addition, the rules provide improved measurement procedures for all equipment using radio frequencies to communicate over power lines.¹⁵ Finally, the Commission changed the equipment authorization process for Access BPL systems from verification (self-approval by manufacturers) to certification (authorization issued by the agency) to allow it to maintain oversight of these systems until additional experience is obtained from their wide deployment. *Id.* at 21274 ¶¶120-26 (JA 32); *see* 47 C.F.R. § 15.101(a).

A. Limiting BPL Interference Potential

The Commission agreed with the comments of the NTIA and others that applying the existing emission limits in Part 15 would be sufficient to address the general potential for Access BPL systems to cause harmful interference. “[T]he current emission limits will restrict Access BPL systems to very low emitted power levels in comparison to the signals of licensed radio operations [that will] constrain the harmful interference potential of these systems to relatively short distances from the power lines they occupy.” *Report & Order*, 19 FCC Rcd at 21282 ¶38 (JA 10). The Commission recognized that while some radio stations, such as amateur radio licensees, may operate “at distances suffi-

¹⁵ *See Measurement Guidelines (Guidelines) for Broadband over Power line (BPL) Devices or Carrier Current Systems (CCS) and Certification Requirements for Access BPL Devices in Appendix C of Report and Order*, 19 FCC Rcd at 21339 (JA 61).

ciently close to power lines as to make harmful interference a possibility,” its conclusion was that “those situations can be addressed through interference avoidance techniques by the Access BPL provider” as set forth in the order. The Commission stated that “the rules we are specifying here facilitate such solutions.” *Id.*

To address the potential for harmful interference, the Commission adopted requirements that Access BPL systems “incorporate capabilities to modify their systems’ operations and performance to mitigate or avoid potential harmful interference to radio services and to deactivate specific units found to actually cause harmful interference that cannot be remedied through modification of their operations” *Report & Order*, 19 FCC Rcd at 21291 ¶59 (JA 17). In other words, the Commission’s rules require Access BPL operators to have the capability from remote locations to reduce power and adjust operating frequencies in order to eliminate specific instances of harmful interference with the operations of licensed radio services. *Id.* at 21294 ¶67 (JA 19). The Commission made clear that this included the capability to shut down portions of their operations upon order of the Commission to address localized interference problems to fixed operations of licensed services that cannot be cured by other means. *Id.* at 21296 ¶¶72-73 (JA 20). These requirements apply uniquely to Access BPL systems and not to other Part 15 devices.

With respect to mobile operations (such as amateur radios in cars), the Commission concluded that reducing the emitted power of the Access BPL operation causing harmful interference by a specified amount (referred to as “notching”) would be “generally assume[d to be] sufficient to resolve any harmful interference that might occur to mobile operations.” *Report & Order*, 19 FCC Rcd at 21294 ¶66 (JA 18). The Commis-

sion based this conclusion on “the low signal levels allowed under the Part 15 emission limits and the fact that a mobile transceiver can readily be repositioned to provide some separation from the Access BPL operation.” *Id.*¹⁶ These steps satisfy the longstanding requirement of Part 15 of the Commission’s rules that unlicensed operations under that section may not cause harmful interference to licensed operations. *See* 47 C.F.R. § 15.5.

The Commission adopted other specific measures to protect against harmful interference. For example, it excluded certain frequency bands (approximately 2 per cent of the spectrum available for Access BPL use) to protect critical Federal government and other uses. *See Report & Order*, 19 FCC Rcd at 21287 ¶49 (JA 13). In addition, it excluded Access BPL operations from a small number of geographic zones and frequencies to protect specific activities such as global maritime distress signaling and radio astronomy operations. *See id.* The rules establish a number of “consultation areas” and require operators of Access BPL systems located in those areas, prior to commencement of service, to notify and consult with designated Federal government, public safety, or aeronautical facility contacts regarding the need to protect critical radio operations. *Id.* at 21288 ¶¶50-52 (JA 14).

¹⁶ The Commission’s rules generally distinguish between “fixed” and “mobile” services, which are defined as might be expected in the agency’s rules. *See* 47 C.F.R. § 2.1 (Fixed service is a “radiocommunication service between specified fixed points” and mobile service is a “radiocommunication service between mobile and land stations, or between mobile stations.”). Amateurs operate both mobile and fixed stations.

B. Notification and Database Requirement

The Access BPL industry is required to establish a publicly accessible database for system information.¹⁷ Under this requirement, before they commence operations, Access BPL system operators must provide the BPL industry's designated database manager with detailed information about their BPL operations.¹⁸ The intent of the notification and database requirements is to ensure that licensed users of the spectrum have a publicly accessible and centralized source of information to identify the location and operating characteristics of BPL systems, so as to facilitate the resolution of harmful interference if it should occur. *See Report and Order*, 19 FCC Rcd at 21300 ¶83 (JA 22).

C. New Requirements for Access BPL Equipment Authorization

Finally, the Commission decided to apply equipment standards to equipment that will be used with Access BPL systems that are more rigorous than those applicable to other such equipment. Specifically, it adopted a "certification" procedure requiring equipment authorization issued by the Commission or its designated entities on the basis of representations and test data submitted by the applicant. *Report & Order*, 19 FCC Rcd at 21314 ¶121 (JA 32). This is in contrast to the less demanding "verification" procedure applicable

¹⁷ *See Report and Order* at 21296-301 ¶¶ 74-87 (JA 20).; *see also*, Public Notice DA 05-2701 (Oct. 13, 2005), announcing that the United Telecom Council will serve as database manager for Access BPL systems.

¹⁸ The BPL operator must provide the following information 30 days prior to the initiation of any operation or service: (1) the name of the Access BPL provider; (2) the frequencies of the Access BPL operation; (3) the postal zip codes served by the specific Access BPL operation; (4) the manufacturer and type of equipment being deployed; (5) point of contact information (both telephone and e-mail address) for interference inquiries and resolution; and (6) the proposed/or actual date of operation. Once the 30-day advance notification timeframe is over, the Access BPL operator can begin operation subject to notification of the database manager of the date of commencement of operations for inclusion in the database. The database manager must enter this information into the publicly accessible database within three business days of receipt. *Report & Order*, 19 FCC Rcd at 21301 ¶85(JA 23); *see* 47 C.F.R. §§ 15.615(a)-(b).

to all other carrier current equipment, which is satisfied by a manufacturer's self-approval of equipment and in which a manufacturer remains obligated to ensure compliance with the rules, but need not employ an accredited laboratory or submit data to the Commission. All Access BPL equipment certification initially will be performed in Commission laboratories – following a practice that the Commission always has adhered to with respect to new or unique equipment. *Id.* at 21316 ¶126 (JA 33).

III. ACTION ON RECONSIDERATION

Fifteen parties, including Access BPL providers and representatives of licensed users of frequencies upon which Access BPL will operate, sought reconsideration of various aspects of the *Report & Order*. The Commission found no basis in any of the petitions to make significant changes to its rules. *Amendment of Part 15 Regarding New Requirements and Measurement Guidelines for Access Broadband of Power Line Systems*, 21 FCC Rcd 9308 (2006)(JA 67). The Commission did take the opportunity, in response to some of the arguments on reconsideration, to clarify some aspects of the rules.

With respect to protection of the amateur radio service from harmful interference, the Commission reiterated the substantial steps it had taken to minimize potential interference to all licensed users, including amateurs. *See Reconsid. Order*, 21 FCC Rcd at 9310 ¶¶4-5 (JA 67). The Commission also explained again its decision concluding that Access BPL signals below a certain level will not cause harmful interference to mobile communications, and in particular amateur mobile communications:

[B]ecause mobile [communication] with relatively weak desired signals that would be affected by noise levels under 24 dBµV/m is generally not reliable, we do not consider increases in background noise resulting from BPL operations that are at or under this level to be harmful interference. As

stated in the Report and Order, we further point out that a mobile user can generally avoid a source of interference, whether it be from Access BPL, noisy power lines, or some other external, localized source, by simply relocating. We also observe that, in most instances, mobile users in motion do not remain in a location where they might be receiving interference.

Id. at 9320 ¶33 (JA 74)(footnote omitted); *see also id.* at 9321 ¶35, *id.* at 9327 ¶53 (JA 72-79); 47 C.F.R. § 15.611(c)(1)(iii) (JA 92).

The Commission rejected ARRL's claim that there was "no statutory underpinning for the application of a 'balancing test' involving interference from unlicensed facilities to licensed radio services." *Reconsid. Order*, 21 FCC Rcd at 9327 ¶54 (JA 79). The Commission pointed out that Access BPL systems fall under the Commission's jurisdiction provided by Section 302 of the Communications Act, in which the Commission is authorized, "consistent with the public interest, convenience, and necessity, [to] make reasonable regulations ... governing the interference potential of devices which in their operation are capable of emitting radio frequency energy by radiation, conduction, or other means in sufficient degree to cause harmful interference to radio communications ... Such regulations shall be applications to the manufacture, import, sale ... and to the use of such devices." 47 U.S.C. § 302a(a). *Id.* The Commission explained that, in concluding that "the benefits of Access BPL for bringing broadband services to the public are sufficiently important and significant so as to outweigh the limited potential for increased harmful interference that may arise," it was acting under its Section 302 authority to consider "the public interest, convenience and necessity in adopting reasonable regulations to effectively control the harmful interference potential of Access BPL." *Id.* at 9328 ¶55 (JA 79).

The Commission also rejected ARRL's proposal that it exclude BPL operations from all frequencies upon which amateurs operate. The Commission found that this

“would needlessly restrict BPL system design and reduce system capacity, without regard to whether there are amateurs that need protection for a particular BPL installation ..., reducing the potential benefits of BPL and increasing its cost to the public, without a corresponding benefit or need.” *Reconsid. Order*, 21 FCC Rcd at 9321 ¶35 (JA 75). The Commission added:

[I]n cases where licensed radio service operators present meritorious claims of interference from a BPL system, we will expect the system operator [to] take the necessary actions to resolve that interference in an expeditious manner. In cases where the system operator does not take expeditious action to resolve harmful interference, the Commission will review the complaint and take appropriate action. In light of the historic and ongoing importance of the amateur radio service – including and especially in emergency situations – the Commission will not allow harmful interference to such users to persist.

Id.

SUMMARY OF ARGUMENT

For nearly seventy years, the FCC has construed the general requirement of Section 301 of the Communications Act for licensing of radio transmissions to permit the agency to authorize low-power unlicensed operations where it finds that such operations present no significant risk of causing harmful interference to licensed operations. ARRL does not appear to disagree with this basic statement of the governing law. The Commission’s action here, in specifically authorizing unlicensed Access BPL operations under Part 15 of its rules in order to promote a new platform for broadband Internet access, is fully consistent with Section 301 and the Commission’s longstanding implementation of the statute in its rules. ARRL’s arguments to the contrary in its brief are based on (1) its mistaken view, previously rejected by the Commission, that the agency may not allow unlicensed operations if there is any risk of interference; (2) a misreading of the Com-

mission's conclusions regarding the protection of mobile operations from harmful interference; and (3) a disagreement with the Commission's reading of its authority to regulate Access BPL devices under Section 302 of the Communications Act.

In adopting the rules, the Commission retained the limits on emitted power for Access BPL operations that have been in existence under Part 15 for many years. Within these limits, the Commission found a "low" likelihood that Access BPL systems would cause harmful interference to licensed stations, such as amateurs' operations. That was an adequately explained and reasonable determination that is well within the FCC's broad discretion in making policy judgments in a technical area. Contrary to ARRL's arguments, the Commission's rules continue to protect licensed mobile operations from harmful interference from Access BPL systems. The reasonableness of the Commission's action is bolstered by its adoption of numerous special technical restrictions and operational procedures, applicable only to Access BPL systems and not to other Part 15 devices, to limit the possibility of harmful interference or to facilitate elimination of harmful interference if it should occur.

Congress has granted the FCC broad discretion generally in determining how to achieve the public interest goals of the Communications Act. More specifically, in Section 302 of the Act, Congress authorized the Commission to take the public interest into account in adopting regulations that cover devices such as those used to provide Access BPL service. And in Section 706 of the 1996 Telecommunications Act, Congress directed the FCC to encourage the deployment of technologies that will provide "advanced telecommunications capability" – *e.g.* broadband internet access – "to all Americans." Against this statutory background, the FCC acted well within its discretion

here in balancing the low likelihood of harmful interference from Access BPL systems operating within the new and existing rules against the benefits of promoting a significant new medium for extending broadband Internet access. The balancing was all the more reasonable because the Commission adopted specific procedures to eliminate harmful interference in the unlikely event that it does occur.

The Court has repeatedly deferred to the FCC's reasonable judgments in technical matters such as this. The Commission acted well within that area of deference when it made technical judgments that ARRL challenges regarding (1) the techniques for measuring Access BPL signal levels, (2) the nature of Access BPL radiofrequency emissions, and (3) the portion of the spectrum on which Access BPL systems would be permitted to operate. The Commission's conclusions were rational, supported in the record in this proceeding (in addition to retaining in several cases the standards in established rules) and adequately explained.

The Commission adequately disclosed in the record the evidence upon which it relied in adopting the Access BPL rules. There was ample basis in the record for the rules that the Commission adopted, which it noted in detail in the *Report & Order* and the *Reconsideration Order*. In addition, the Commission disclosed the data and other portions of staff studies that it considered. The Commission fully complied with the APA requirements, as construed by this and other courts, that an agency "identify and make available [for public comment] technical studies and data that it has employed in reaching the decisions to propose particular rules."¹⁹ Insofar as the Commission did not disclose its

¹⁹ *Connecticut Light and Power Co. v. NRC*, 673 F.2d 525, 530-531 (D.C. Cir.), *cert. denied*, 459 U.S. 835 (1982).

staff's analysis of the data collected in its studies (which it did not rely on in any event), this Court's precedents make clear that an agency need not disclose internal staff analyses of publicly disclosed data, regardless of whether the agency accepts or rejects or ignores the staff analysis.

ARGUMENT

I. STANDARD OF REVIEW

A reviewing court may reverse the agency's determinations only if they are "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. 706(2)(A). Under that highly deferential standard, the Commission need only articulate a "rational connection between the facts found and the choice made." *Motor Vehicle Mfrs. Ass'n v. State Farm Mutual Ins. Co.*, 463 U.S. 29, 43 (1983). The Court "presume[s] the validity of the Commission's action and will not intervene unless the Commission failed to consider relevant factors or made a manifest error in judgment." *Consumer Electronics Ass'n v. FCC*, 347 F.3d 291, 300 (D.C.Cir. 2003).

The deference accorded to the agency is particularly broad in a case that involves the Commission's scientific and technical expertise. *MCI Cellular Telephone Co. v. FCC*, 738 F.2d 1322, 1333 (D.C. Cir. 1984). In such a case, the Court will uphold the FCC's ruling as long as the agency has supported its technical judgment "with even a modicum of reasoned analysis." *Hispanic Information & Telecommunications Network v. FCC*, 865 F.2d 1289, 1297-1298 (D.C. Cir. 1989).

Review of the agency's interpretation of its statute is governed by *Chevron U.S.A., Inc. v. Natural Resources Defense Council*, 467 U.S. 837, 842-843 (1984). Under *Chevron*, if "the intent of Congress is clear" from the language of the statute, "that is the end

of the matter.” *Id.*, 467 U.S. at 842. But if the statutory language does not reveal the “unambiguously expressed intent of Congress” on the “precise question” at issue, the Court must accept the agency’s interpretation as long as it is reasonable and “is not in conflict with the plain language of the statute.” *National R.R. Passenger Corp. v. Boston & Maine Corp.*, 503 U.S. 407, 417 (1992).

**II. THE RULES FOR ACCESS BPL OPERATIONS
ARE REASONABLE AND CONSISTENT WITH THE
COMMUNICATIONS ACT AND COMMISSION PRECEDENT.**

A. The Rules Are Consistent With The Communications Act.

Section 301 of the Communications Act, 47 U.S.C. § 301, provides that “[n]o person shall use or operate any apparatus for the transmission of energy or communications or signals by radio ... except under and in accordance with the provisions of this Act and with a license” Almost from the beginning of its regulatory existence, the FCC has construed Section 301 not to require the licensing of devices that do not transmit energy in a manner and to a degree that has any real potential to affect the Nation’s communications network adversely. In adopting this reading of the statute, the Commission recognized that many devices that operate at very low power levels and at very short distances are not likely to cause harmful interference and thus need not be licensed under Section 301.²⁰

The Commission first adopted rules for unlicensed operation of low power radio devices in 1938.²¹ The essential elements of that regulatory regime continue to apply

²⁰ See *Revision of Part 15 of the Commission’s Rules Regarding Ultra-Wideband Transmission Systems*, 19 FCC Rcd 24558, 24590 ¶69 (2004).

²¹ See *Ultra-Wideband*, 19 FCC Rcd at 24590 n.179 (describing the development of these early rules).

today, as set out in Part 15 of the agency's rules. 47 C.F.R. Part 15. The Commission recently explained that it adopted these rules "because it concluded that lower power radio frequency devices could be used on a widespread unlicensed basis, consistent with the public interest, if the Commission regulated their technical capabilities to ensure that they did not interfere with the orderly operation and development of radio communications." *Ultra-Wideband*, 19 FCC Rcd at 24590 ¶69. A vast array of widely used products operate within the requirements and limitations of Part 15 – for example, computers, digital cameras, digital music players, cordless phones, garage door openers, and many others.²²

Part 15 of the Commission's rules makes clear that any operation that is not in accordance with those regulations must be licensed under Section 301 unless it is exempted elsewhere in the rules.²³ The Commission continues to rely on the harmful interference criterion as the basis for allowing unlicensed operations under Part 15, consistent with its reading of the Section 301 reference to "apparatus for the transmission of energy" not to include devices that have no such interference potential.²⁴ The Commission's rules define "harmful interference" in the context of Part 15 as "[a]ny emission,

²² See *Modification Of Parts 2 And 15 Of The Commission's Rules For Unlicensed Devices And Equipment Approval*, 19 FCC Rcd 13539, 13540 ¶4 (2004)

²³ See 47 C.F.R. § 15.1(a) (providing that Part 15 sets out the regulations under which an intentional, unintentional, or incidental radiator may be operated without an individual license); 47 C.F.R. § 15.1(b) (requiring that an intentional or unintentional radiator operate in conformity with the regulations of Part 15 or be otherwise licensed or exempted).

²⁴ *Modification Of Parts 2 And 15*, 19 FCC Rcd at 13540 ¶4; see *Ultra-Wideband*, 19 FCC Rcd at 24587-94 ¶¶64-78. As the Commission has noted, Congress has long been aware of the Commission's reading of the Act and its rules allowing unlicensed operation, has referenced Part 15 in legislation and has not indicated any disapproval of the practice. See *Ultra-Wideband*, 19 FCC Rcd at 24592 ¶¶73-74.

radiation or induction that endangers the functioning of a radio navigation service or of other safety services or seriously degrades, obstructs or repeatedly interrupts a radiocommunications service operating in accordance with this chapter.” 47 C.F.R. § 15.3(m); *see also* 47 C.F.R. §2.1(c).

Contrary to the claims in ARRL’s brief, the Commission’s actions in the orders now before the Court are fully consistent with both the provisions of Section 301 and the agency’s longstanding interpretation of Section 301 as reflected in Part 15 of its rules. The Commission did not modify the basic requirement that parties operating devices on an unlicensed basis pursuant to Part 15 of the rules – such as Access BPL – not cause harmful interference to licensed services. Indeed, as discussed in the counterstatement above, the Commission adopted additional technical rules to reduce the possibility of harmful interference from Access BPL systems; and it established operational procedures to address promptly those instances of harmful interference when they do occur, even though the agency concluded that the likelihood of such interference would be “low.”

As an initial matter, the Commission retained the existing radiated emission limits applicable to devices such as those used to provide Access BPL service, and, indeed, it rejected calls by some commenters to relax those limits.²⁵ The Commission agreed with the conclusions of many commenters, as well as studies conducted by NTIA, “that the current emission limits will restrict Access BPL systems to very low emitted power levels in comparison to the signals of licensed operations. The effect of those limits will be to constrain harmful interference potential of these systems to relatively short distances from the power lines that they occupy.” *Report & Order*, 19 FCC Rcd at 21282 ¶38 (JA

²⁵ *See, e.g., Report & Order*, 19 FCC Rcd at 21281 ¶37 (JA 10).

10). Record evidence supports this conclusion.²⁶ The Commission acknowledged “a possibility” of harmful interference – particularly with respect to amateur operations – but it concluded that “those situations could be addressed through interference avoidance techniques by the Access BPL providers” as required by procedures adopted in this proceeding. *Id.*

ARRL does not appear to dispute the Commission’s authority under the Communications Act to permit unlicensed operations in the context of Part 15, a practice the agency has followed for nearly 70 years. Rather, ARRL’s argument is that the agency may employ that authority only in situations where there is no risk of any interference to licensed operations (Br. at 22-23). As noted, there is a vast array of commonly-used devices that have some potential to cause interference and that operate on an unlicensed basis pursuant Part 15 because the FCC has concluded that there is little risk of harmful interference to licensed services. ARRL’s position would require that all of these devices be licensed, or cease operation, unless the FCC found that they presented no risk of interference. *See* ARRL Br. at 22 (“[A] device that does risk interference must be licensed.”)(emphasis original). There is no basis for this extreme position, which the Commission has repeatedly rejected.

For example, in a recent Part 15 rule making, the Commission addressed this argument at length:

ARRL asserts that the Commission must at some point acknowledge that Part 15 devices, “[A]re allowed under the Communications Act only where they have no interference potential to licensed services.” We do not agree

²⁶ *See, e.g.*, NTIA Comm. at 7-8; AT&T Comm. at 4; Duke Energy Comm. at 13; Main.NET Comm. at 5-6; PPL Telcom Comm. at 4; Southern Comm. at 15; UPLC Comm. at 7 (JA 349-50; 230; 247; 261-62; 294-95; 305-07; 312).

with this viewpoint. The Communications Act of 1934 as amended provides that, “[T]he Commission may, consistent with the public interest, convenience, and necessity, make reasonable regulations (1) governing the interference potential of devices which in their operation are capable of emitting radio frequency energy by radiation, conduction, or other means in sufficient degree to cause harmful interference to radio communications” [47 U.S.C. §302a(a)] ARRL’s interpretation of this authority is overly conservative. The operating requirements of Part 15 appropriately provide a means for allowing unlicensed devices to share spectrum with licensed services with little risk of interference to licensed services. If interference does occur, these rules provide adequate protection to licensed services by requiring the unlicensed device to cease operation until the problem is corrected. [47 C.F.R. § 15.5] The rules permit the creation and advancement of new and innovative unlicensed low power products and services.

Amendment Of Part 15 Of The Commission's Rules To Allow Certification Of Equipment In The 24.05 - 24.25 GHz Band, 16 FCC Rcd 22337, 22341 ¶12 (2001)(footnotes omitted). *See also Ultra-Wideband*, 19 FCC Rcd at 24589 ¶68(“Cingular’s reading would require the Commission to apply Section 301’s licensing requirement to any apparatus that transmits any amount of energy, no matter how negligible. . . . A more reasonable reading of Section 301, consistent with Congress’s intent and subsequent legislation, would limit the licensing requirement to any apparatus that transmits enough energy to have a significant potential for causing harmful interference.”).

Even if ARRL’s argument is directed only at protection from harmful interference, the cases cited by ARRL do not support its claim to an absolute protection from any risk of harmful interference. *See, e.g.*, Br. at 23-24; ARRL Recon. Pet. at 15 (JA 618)(The “likelihood of harmful interference” to licensed operations must be “virtually nil.”). Indeed, at least one Commission ruling that ARRL cites includes language virtually identical to that in the *Report & Order* here, explaining that “[t]he technical standards for Part 15 transmission systems are designed to ensure that there is a low probability that these devices will cause harmful interference to other users of the spectrum.” Br. at 23 n.

36, *quoting Spread Spectrum Transmitters*, 12 FCC Rcd 7488 ¶2 (1997)(emphasis added). And when the Commission undertook a comprehensive rewrite of Part 15 in 1989, it explained that its goal was to provide “satisfactory” or “adequate” protection for licensed users from harmful interference – not the type of absolute protection ARRL claims. *See Revision of Part 15*, 4 FCC Rcd 3493 ¶¶12-13 (1989).

Part 15 has always been premised on protecting licensed services from a significant potential for harmful interference from unlicensed devices authorized by those rules. The Commission did not directly or indirectly modify that standard in this proceeding. When the Commission has reasonably determined, as it has here, that “the harmful interference potential from Access BPL systems operating in compliance with [its rules] is low,” permitting such operations without licensing is consistent with the statute as the Commission has consistently interpreted it and with the FCC’s established precedent in this area. *See Report & Order*, 19 FCC Rcd at 21275-83 ¶¶23,41 (JA 6, 11).

The reasonableness of the Commission’s action is bolstered in this case by its adoption of additional requirements to mitigate promptly any harmful interference in the unlikely event that it occurs. These requirements include Access BPL operators’ obligation to modify or shut down portions of their operations if local instances of harmful interference to fixed operations of amateurs or others cannot be eliminated by other means. *See id.* at 21289-302 ¶¶54-88 (JA 15-24). The Commission summarized the additional requirements and restrictions it imposed on Access BPL that do not apply to other Part 15 devices:

The rules we put in place further subject Access BPL systems to additional limitations not required of any other unlicensed equipment: notching and frequency agility, consultation with licensed users, avoidance of operation in exclusion zones on certain excluded frequencies, Access BPL location

identification in a public database, and an extensive method of measurement to determine compliance with our rules. Taken together, these provisions will minimize instances of harmful interference from Access BPL to authorized radio services. *See* 47 C.F.R. § 15.615.

Reconsid. Order, 21 FCC Rcd at 9326 n.116 (JA 89). It is unclear whether there is any level of interference protection that would ever satisfy ARRL, but it is clear that the steps taken by the Commission here are more than sufficient to satisfy its obligation under the statute and its precedent.

B. The Rules Continue To Protect Amateur Mobile Operations From Harmful Interference.

ARRL's brief recognizes, if somewhat grudgingly, that the Commission has made no changes in its rules that reduce the protection that amateurs' fixed operations get from harmful interference, and indeed has added protections that apply uniquely to Access BPL. However, ARRL contends that the Commission strips mobile licensed operators "of the assurance they previously enjoyed under the FCC's rules that 'all Part 15 devices operate under the condition that transmission must cease if the Part 15 device causes harmful interference.'" Br. at 25. This is an incorrect reading of the *Report & Order*. Amateur radio operators have never had a right to be free at all times and everywhere from any and all interference. Instead, their licenses entitle them to protection from only "harmful" interference, and the *Report & Order* fully maintains that protection.

The Commission in the *Report & Order* fully explained the basis for its treatment of amateur mobile operations. In addition to other requirements described above designed to mitigate the risk of harmful interference, the new rules require an Access BPL operator to "notch," *i.e.*, reduce, its emitted power by a specified level in response to complaints of harmful interference from amateur mobile operators. *See Reconsid. Order*, 21 FCC Rcd at 9318 ¶29 (JA 73). Once the Access BPL operator has reduced its signal to that level,

the Commission determined, the signal “will not constitute harmful interference to mobile, and in particular, amateur mobile communications.” *Id.* at 9320 ¶33 (JA 74) (emphasis added); *see* 47 C.F.R. 15.611(c)(1)(iii)(JA 92). The Commission based this conclusion on its studies and experience that, at this reduced level, “Access BPL emissions would not be significantly greater than the background noise at the distances normally used for protection against harmful interference from Part 15 unlicensed devices.” *Id.* at 9319 ¶30 (JA 74).

The Commission acknowledged that there might be circumstances where mobile operations would be marginally affected by Access BPL emissions, even at the reduced signal level. However, it pointed out that for the relatively weak amateur radio signals that might be affected by Access BPL emissions at the reduced level, mobile reception is generally intermittent and unreliable in any event. This is so because both the received signal and the ambient noise levels vary as the amateur operator’s vehicle moves. In other words, Access BPL signals reduced by the notching requirement would not appreciably worsen the already poor reception of weak signals in the mobile context. *Reconsid. Order*, 21 FCC Rcd at 9320 ¶32 (JA 74). Noting that mobile users can avoid a source of harmful interference by moving and “that, in most instances, mobile users in motion do not remain in a location where they might be receiving interference.” *Id.* at 9319 ¶32 (JA 74)), the Commission reasonably concluded that whatever interference the reduced level of Access BPL signals might create would not constitute “harmful interference” in the mobile context within the meaning of the Part 15 rules.²⁷ This is fully consistent with the

²⁷ The Commission emphasized that it expected Access BPL operators to resolve complaints of harmful interference “without delay” and that its staff would review complaints and “take
(footnote continued on following page)

rules' definition of harmful interference as interference that "seriously degrades, obstructs or repeatedly interrupts a radiocommunications service." 47 C.F.R. § 15.3(m).

Thus, contrary to ARRL's claim, the Commission's rules continue to protect mobile operators from harmful interference from Access BPL systems. On the basis of the Commission's technical determinations regarding the nature of mobile operations and the effect of Access BPL emissions that must be reduced if there is an interference complaint, the Commission's decision was reasonable under the ordinary standard of review. In a highly technical area such as this, the Commission's explanation goes well beyond the "modicum of reasoned analysis" that the Court has said is adequate. *Hispanic Inf. & Tele. Network v. FCC*, 865 F.2d at 1298; *accord Mobile Relay Associates v. FCC*, 457 F.3d 1, 8 (D.C.Cir. 2006). Moreover, if the Commission's predictive judgment that there will be a low probability of "harmful" interference under these rules should be proven wrong by subsequent events, petitioners will be free to bring that to the Commission's attention and seek a rule change. *See FCC v. WNCN Listeners Guild*, 450 U.S. 582, 603 (1981) ("[T]he Commission should be alert to the consequences of its policies and should stand ready to alter its rule if necessary to serve the public interest more fully."); *accord Bechtel v. FCC*, 957 F.2d 873, 881 (1992).

ARRL also claims that the agency has without explanation changed its policy regarding the protection of mobile operations from harmful interference. This is simply a misreading of the Commission's orders. The Commission concluded that compliance with existing Part 15 rules and the new requirements unique to Access BPL would ensure

(footnote continued from preceding page)

appropriate action in an expeditious manner" pursuant to the requirements found in the rules. *Reconsid. Order*, 21 FCC Rcd at 9320 ¶33 (JA 74).

that there would in fact be no harmful interference to mobile amateur operations. There was no reason for the Commission to require Access BPL operators to cease operations on the basis of harmful interference the Commission had concluded would not take place.

The Commission did for the first time define what would constitute harmful interference – or, more precisely, what would not constitute harmful interference – in the mobile context. This did not represent a change in policy because there was in fact no policy to change. Far from “revers[ing] 70 years of consistent application of section 301,” Br. at 21, the Commission’s analysis simply applies it in a new factual setting. And, as discussed previously, the Commission provided ample explanation for the choices it made.

***C. Technical Judgments That The Commission Made
In Adopting The Rules Were Reasonable.***

The Commission adopted detailed “measurement procedures for Access BPL to minimize instances of interference and to facilitate resolution of such interference where it might occur.” *Reconsid. Order*, 21 FCC Rcd at 9310 ¶4 (JA 67); *see Report & Order*, 19 FCC Rcd 21339 App. C (JA 60). ARRL erroneously contends that the Commission’s highly technical judgment with respect to one aspect of these procedures was flawed because it “has no basis in the evidentiary record.” ARRL Br. at 18. The issue involves the measurement of BPL emissions to ensure compliance with the limits imposed by Part 15 of the Commission’s rules.

Because it is often not possible or practical to take field strength measurements at fixed distances, the Commission employed what is known as an “extrapolation factor” to

take this into account.²⁸ This allows tests to be made at other than the specified distances and adjusted by use of a factor reflecting the decay rate of field strength as distance from the source increases. This is referred to as the “extrapolation factor,” which is measured in dB per decade.²⁹ A higher number for the extrapolation factor predicts that the field strength decays more rapidly than a lower number. Part 15 of the Commission’s rules contained an existing extrapolation factor of 40 dB per decade for some frequencies in the range that amateurs operate. *See* 47 C.F.R. §15.31(f)(2).

The Commission examined this issue in the *Report and Order* and found the data inconclusive. Generally, BPL proponents supported the existing factor, and ARRL and others supported a lower number that assumes that field strength decays less rapidly by distance. In the end, “[g]iven the lack of conclusive experimental data pending large scale Access BPL deployments,” the Commission said it would “continue the use of the existing Part 15 distance extrapolation factors” specified in the rules. It further stated that “[i]f new information becomes available that alternative emission limit/distance standards or extrapolation factors would be more appropriate,” the Commission, “will revisit this issue at another time.” *Report & Order*, 19 FCC Rcd at 21310 ¶109 (JA 29). On reconsideration, it adhered to that position, finding that “[n]o new information has been submitted that would provide a convincing argument for modifying this requirement at this time.” *Reconsid. Order*, 21 FCC Rcd at 9317 ¶26 (JA 73).

²⁸ The rules provide for measurements at 3 and 10 meters from typical locations. However, those specified distances may place the measurement antenna in a dangerous location, for example on a roadway. *See Report & Order*, 19 FCC Rcd at 21310 ¶109 (JA 29).

²⁹ “Decade,” a 10:1 range, refers to the ratio of the specified measurement distance to the actual measurement distance. *See Report & Order*, 19 FCC Rcd at 21303 n.181 (JA 43).

ARRL's claim that there is no record evidence to support the Commission's conclusion is simply not correct. In the first place, the Commission did not adopt a new extrapolation factor for Access BPL. Instead, it chose to maintain the extrapolation factor contained in an existing rule that, even prior to this rule making, was applicable to Access BPL devices.³⁰ In addition, the Commission noted, for example, "that NTIA's latest computer modeling results show that the variation of field strength with distance is consistent with the existing Part 15 distance extrapolation" *Report & Order*, 19 FCC Rcd at 21310 ¶109 (JA 29). *See also* Ameren Comm. at 8; Ameren Reconsid. Opp. at 2-5; Current Comm. at 14-15; Current Reconsid. Opp. at 19 (JA 177, 662-65, 239-40, 673). Given the record support for retention of the existing extrapolation factor and the lack of data demonstrating it was incorrect, the Commission reasonably chose to preserve the status quo.

ARRL's disagreement with the weight that the Commission gave this record evidence (*e.g.*, Br. at 36-37) does not support its claim that there was "no basis in the evidentiary record" (Br. at 18) for the Commission's conclusion. In view of the considerable deference owed the agency in a highly technical area such as the appropriate extrapolation factor to apply in measuring RF emission levels from Access BPL systems, the Court should not second-guess the FCC's judgment to continue using a well-established rule in the absence of new and more persuasive data. *See MCI Cellular Tel. Co.*, 738 F.2d at 1333 (deference to agency expertise is especially appropriate when the agency is required to balance competing interests in a highly technical area); *American Iron & Steel Inst. v.*

³⁰ The particular rule, 47 C.F.R. 15.31(f)(2), has been in effect for many years. *See, e.g., Revision of Part 15*, 4 FCC Rcd 3493 at ¶105.

EPA, 115 F.3d 979, 1004 (D.C.Cir. 1999) (deference to an agency's decision to proceed on the basis of imperfect scientific information, rather than to conduct the perfect study).

ARRL also claims that it was unreasonable for the Commission to rely on the provisions in its existing rule because those provisions had been developed to address “point-source radiators,” whereas Access BPL systems create geographically widespread distributed systems that require different treatment. Br. at 38. The Commission was fully aware of this issue. *See Report & Order*, 19 FCC Rcd at 21280-84 ¶¶34-43 (JA 9-12). The Commission agreed with ARRL and others that “Access BPL on overhead lines is not a traditional point-source radiator,” but it was not convinced that this difference warranted the restrictive measures that ARRL called for. *Id.* at 21282 ¶39 (JA 11). The Commission explained:

[W]e do not believe that Access BPL devices will cause the power lines to act as countless miles of transmission lines all radiating RF energy along their full length. First, the Part 15 emission limits for carrier current systems have proven very effective at controlling interference from such systems. Also, for the reasons indicated by PPL Telcom, we believe that the design and configuration of Access BPL systems will be inconsistent with the development of cumulative emissions effects for nearby receivers. Moreover, the NTIA Phase 1 Study and our own field measurements of Access BPL installations indicate that these systems are not efficient radiators, nor are their emissions cumulative such that they permeate areas in which they are located. Rather, we find that emissions from Access BPL systems tend to dissipate after a short distance from a coupler along a line, and then remain relatively the same for some distance. Along the line there also may be multiple points where emissions may be relatively higher but within the Part 15 limits. However, because the signal level decreases significantly with distance perpendicular from the line, the potential for interference also decays rapidly with distance from the line.

Id.(footnotes omitted). The Commission added that to “ensure that the effects of the power line as a radiator are taken into consideration when testing for compliance with our Part 15 rules,” it had adopted as part of its measurement procedures for Access BPL

systems a requirement “that emission measurements are to be made at several specific distances from the Access BPL equipment source, and that measurements are to be taken parallel to the power line to find the maximum emissions from the BPL system.” *Id.* The Commission considered the issue, fully explained its rejection of ARRL’s approach, but adopted procedures designed to address the problem ARRL had identified. The Court should defer to the Commission’s resolution of this technical issue.

D. The Commission Properly Concluded That Access BPL Systems Are Subject To Regulation Under Section 302 Of The Communications Act.

ARRL advances an extended argument (Br. at 26-31) that the Commission erred in declaring in the *Reconsideration Order* that “BPL systems do not fall within Section 301 at all because they are ‘unintentional radiators’ rather than ‘radio communications systems’” and that they come under the Commission’s jurisdiction as provided by Section 302 of the Communications Act, 47 U.S.C. 302a. Br. at 26, *quoting Reconsid. Order*, 21 FCC Rcd at 9327 ¶54 (JA 79). ARRL misunderstands the import of this statement when read in the context of the entire order and also misconstrues the statutory scheme.

In the first place, ARRL’s argument that the Commission’s reliance on Section 302 “departs without explanation from the agency’s prior understanding of the relationship between sections 301 and 302”³¹ was never presented to the Commission by ARRL or others and may not be raised for the first time on review. 47 U.S.C. 405(a). *See Cellco Partnership v. FCC*, 357 F.3d 88, 102 (D.C.Cir 2004)(finding that Section 405 barred a claim that the order was inconsistent with other orders); *see also Qwest Corp. v. FCC*,

³¹ Br. at 31; *see also* Br. at 27. ARRL mentioned Section 302 in a footnote in an April 2005 pleading to the Commission but did not argue that reliance on it would be inconsistent with Commission precedent. *See* “ARRL Reply to Opp. to Pet. for Recon.” at n. 5 (April 1, 2005)(JA 686).

482 F.3d 471, 474 (D.C.Cir 2007) (“even when a petitioner has no reason to raise an argument until the FCC issues an order that makes the issue relevant, the petitioner must file a petition for reconsideration with the Commission before it may seek judicial review”), quoting *In re Core Communications, Inc.*, 455 F.3d 267, 276 (D.C.Cir. 2006)).

In any event, ARRL’s claim is meritless. Section 301 provides that “[n]o person shall use or operate any apparatus for the transmission of energy or communications or signals by radio ... except under and in accordance with this chapter and with a license” Section 302(a)(1) authorizes regulations “governing the interference potential of devices which in their operations are capable of emitting radio frequency energy by radiation [or] conduction ... in sufficient degree to cause harmful interference to radio communications” BPL systems certainly come under section 302 because they are devices capable of causing harmful interference by “radiation [or] conduction.” The Commission therefore clearly had authority under that provision to issue regulations “consistent with the public interest, convenience, and necessity” to govern them. That public interest standard gave the Commission broad latitude in determining how far to go to avoid such interference.

It is equally clear that Section 301’s licensing requirements do not apply to Access BPL systems that follow the Part 15 rules. The Commission has long read the term “interference” under section 301 to mean “harmful interference” of the type that can be prevented by regulations promulgated under section 302. Since the FCC has reasonably found that Access BPL systems are unintentional radiators that, when operating in accordance with the rules at issue here, will not cause harmful interference to amateurs or other licensed operators, then licensing is plainly not required by Section 301. The Com-

mission's interpretations of its governing statutes are entitled to deference under *Chevron*. And its interpretations of its own regulations, including the Part 15 regulations, are entitled to even greater deference. *See AT&T Wireless Services, Inc. v. FCC*, 270 F.3d 959, 963-64 (D.C.Cir. 2001).

The underlying premise of ARRL's unexplained change of policy claim is that the Commission had to develop this "last-minute" "misdirection" because it was unable to "reconcile its authorization of interference-causing unlicensed devices with Section 301" Br. at 26. However, as noted above, the Commission five years earlier had rejected ARRL's claim that the agency lacked authority under Section 301 to authorize devices that have any potential to interfere with licensed services. In particular the Commission pointed to the authority provided in Section 302. *See p. 27 above, quoting Amendment of Part 15*, 16 FCC Rcd at 22341. Having previously rejected ARRL's arguments as reflecting an "overly conservative" (*id.*) reading of Section 301, and having relied on the applicability of Section 302 in the process, the Commission had no reason here to engage in "misdirection." Nor did its reference to Section 302 constitute a change in agency policy.

ARRL itself sets up a false dichotomy in suggesting that section 302 covers "manufacture or sale" but not "use or operation" Br. 30-31. The provision may have been prompted by the desire to give the FCC authority over the manufacture and sale of covered devices, but its plain text explicitly goes beyond that: the FCC's regulations under section 302(a) "shall be applicable to the manufacture, import, sale ... and to the use of such devices." (emphasis added).

ARRL cites in support of its argument the language of 47 C.F.R. §15.1(b) that “[t]he operation of an ... unintentional radiator that is not in accordance with the regulations in this part must be licensed pursuant to the provisions of section 301,’ unless exempted by other provisions of the rules.” Br. at 30 (emphasis by ARRL). This regulation is entirely consistent with the Commission’s approach here. The rule’s reference to Section 301 relates to an “unintentional radiator that is not in accordance with the regulations in this part.” BPL systems or other unintentional radiators that do not comply with the Part 15 rules for unlicensed operations cannot operate consistent with Section 301 unless they obtain a license. It does not follow from that, however, that Section 301 requires licenses for those operations that do comply with the Part 15 rules. The Commission’s determination that BPL systems and other unintentional radiators that operate in accordance with Part 15 of the agency’s rules fall under the Commission’s jurisdiction conferred by Section 302 of the Act and do not require licensing under Section 301 is a permissible interpretation of the statutes that is not inconsistent with agency precedent.

E. The Commission Acted Reasonably In Deciding Not To Restrict Access BPL Operations To A Small Portion Of The Spectrum In Question.

ARRL describes as “the most unfortunate aspect of the orders under review” (Br. at 42) the fact that the Commission declined to adopt the proposal of ARRL and the broadcast industry that it limit Access BPL operations to only a small portion (approximately 25 per cent) of the spectrum that would otherwise be available.³² Consistent with

³² Access BPL systems are permitted to operate on 1.7 MHz – 80 MHz. *See* 47 C.F.R. § 15.3(ff) . Consistent with its apparent position that amateur operators should face no risk of harmful interference, ARRL proposed to confine Access BPL operation to between 30 and 50 MHz (where there are no amateur frequencies). For their part, broadcasters proposed to prohibit operations above 50 MHz where some broadcast stations operate. *See Reconsid. Order*, 21 FCC Rcd at 9331 ¶67 (JA 81).

its rigid position that amateur radio operators must be shielded from any and all risk of interference, this proposal would have barred Access BPL from use of all spectrum used by amateurs. According to ARRL, “the real world proves this alternative is workable” because one BPL operator in fact does operate within that limited spectrum. *Id.* at 44.

In light of its conclusions regarding the low probability of harmful interference from Access BPL systems and the additional protective measures it was adopting, the Commission did not see a need to limit Access BPL operations to that small slice of the spectrum. *Report & Order*, 19 FCC Rcd at 21289 ¶53 (JA 15). As the Commission reiterated on reconsideration, the exclusion proposed by ARRL and the broadcasters “would needlessly restrict BPL system design and reduce system capacity, without regard to whether there are amateurs that need protection from a particular BPL installation. This would result in a grossly inefficient utilization of Access BPL capacity, reducing the potential benefits of BPL and increasing its cost to the public, without a corresponding benefit or need.” *Reconsid. Order*, 21 FCC Rcd at 9325 ¶50 (JA 78).

The Commission’s conclusion is supported in the record. *See, e.g.*, [Letter of June 21, 2006 from George Wheeler to Marlene Dortch] (JA 851-54)(explaining, on behalf of Ambient Corp., which was operating an Access BPL system, “that continued access to this spectrum [including frequencies on which amateurs operate] is essential to promote legitimate opportunities for the development of Access BPL technologies and services to the public and to allow for diversity in BPL technologies to foster the growth of the technology.”). ARRL does not dispute the Commission finding that spectrum limitations on Access BPL operations proposed by amateurs and broadcasters would preclude Access BPL from operating in areas regardless of whether there are amateurs that need protec-

tion or whether there are operating broadcast stations. *See Reconsid. Order*, 21 FCC Rcd at 9325 ¶50, 9331 ¶69; *Report & Order*, 19 FCC Rcd at 21276 ¶24 & n.53 (JA 81, 7, 39). It was reasonable for the Commission to conclude that the proposed spectrum limits were unnecessary to protect amateurs and broadcasters from harmful interference and would impose unnecessary restrictions on Access BPL operations.

In the end, ARRL's complaint on this point reflects a disagreement with the Commission on the preferable policy for balancing the goal of fostering development of Access BPL to make broadband access more widely available with the goal of protecting existing licensed users of those same frequencies from harmful interference.³³ The Commission amply explained the basis for its policy choice with respect to the portion of the spectrum in which Access BPL should be permitted to operate. It need not defend its decision as the "only" or "best" way to address a problem. As the Court has held,

[t]he petitioners have misunderstood the Commission's burden. The FCC need not demonstrate that it has made the only acceptable decision, but rather that it has based its decision on a reasoned analysis supported by the evidence before the Commission. Particularly where, as here, an agency issues a regulation reflecting reasoned predictions about technical issues, logic suggests that the record may well contain evidence sufficient to support more than one possible outcome.

Association Of Public-Safety Communications Officials-Int'l, Inc. v. FCC, 76 F.3d 395, 398 (D.C.Cir. 1996). The FCC's decision in this case easily meets that standard. *See also Mobile Relay Associates*, 457 F.3d at 8 ("We have previously declared that if the Com-

³³ The same is true with respect to the broadcasters' three-page filing in this case supporting ARRL. Their contention that the "FCC did not adequately weigh the competing policy concerns raised by MSTV and NAB" is merely a complaint that the Commission did not adopt the broadcasters' position that Access BPL providers should not be permitted to operate at all on frequencies that broadcasters use despite the Commission's finding that the likelihood of harmful interference is low and despite the technical restrictions and operational procedures adopted by the Commission. *See* "Notice of Intervenor Supporting Petitioner" at 3.

mission is ‘fostering innovative methods of exploiting the spectrum,’ it ‘functions as a policy maker’ and is ‘accorded the greatest deference by a reviewing court,’” *citing Tele-desic LLC v. FCC*, 275 F.3d 75, 84 (D.C.Cir. 2001)).

Second, ARRL ignores that Congress has granted the FCC broad discretion in determining how best the public interest goals of the act can be met. The Commission is entitled to “implement its view of the public interest standard of the Act ‘so long as that view is based on consideration of permissible factors and is otherwise reasonable.’” *FCC v. WNCN Listeners Guild*, 450 U.S. 582, 594 (1981), *quoting FCC v. NCCB*, 436 U.S. 775, 793 (1978). The FCC acted well within its discretion here in balancing the low likelihood of harmful interference it found could occur from Access BPL systems operating within the new rules against the benefits of providing a regulatory framework that would facilitate the development of Access BPL, which offers the potential to be a significant new medium for extending broadband Internet access to American homes and businesses. *See Report & Order*, 19 FCC Rcd at 3345 ¶¶23-24. And, it was particularly appropriate for the Commission to take into account the benefits of Access BPL development in making its public interest balancing determination in light of the Congressional policy reflected in Section 706 of the 1996 Telecommunications Act to encourage technologies that will provide broadband internet access. *See* p. 5 & n. 2 above.

III. THE FCC ADEQUATELY DISCLOSED IN THE RECORD DATA UPON WHICH IT RELIED IN ADOPTING THE BPL RULES.

Section 553 of the Administrative Procedure Act requires agencies conducting notice-and-comment rulemaking proceedings to set forth in the notice of proposed rule making “either the terms or substance of the proposed rule or a description of the subjects and issues involved” in the proceeding, and to “give interested persons an opportunity to

participate in the rule making through submission of written data, views, or arguments.” 5 U.S.C. § 553(b), (c). The Court has interpreted those statutory provisions as requiring an agency generally to “identify and make available [for public comment] technical studies and data that it has employed in reaching the decisions to propose particular rules.” *Connecticut Light and Power Co. v. NRC*, 673 F.2d 525, 530-531 (D.C. Cir.), *cert. denied*, 459 U.S. 835 (1982). ARRL charges the Commission with having violated that requirement because, it contends, the rulemaking record in this case did not contain, prior to the adoption of the rules in the *Report & Order*, all of the data on which the Commission relied. As a result, ARRL claims, the orders should be set aside because “[w]here an agency cites technical studies as the basis of a rule, it may not rely on the sentences containing favorable data and hide the rest from public disclosure.” (Br. at 18). ARRL’s argument distorts the facts as to this dispute. There is no basis for the claim that the Commission failed to disclose information that it was obligated to disclose or that the timing of the material it released constitutes reversible error.

In response to ARRL’s Freedom of Information Act [“FOIA”] request for “those documents ...on which the Commission relied” in the *Report & Order*, the Commission released hundreds of pages of documents in six specified categories. *See Letter from Edmond Thomas to Christopher Imlay* (Jan. 4, 2005)(JA 581). The letter supplying copies of those documents to ARRL states:

[C]ertain portions of those presentations have been redacted, as they represent preliminary or partial results or staff opinions that were part of the deliberative process, exempt from disclosure under [47 C.F.R. §0.457(e)] of the Commission rules and Section 552(b)(5) of the FOIA. Moreover, the redacted information was not relied on by the Commission in making its decision, and thus would not be responsive to your request.

Id. at 2 (JA 582); *see also Reconsid. Order*, 21 FCCR at 9324 ¶¶47-49 (JA 77).³⁴ Of approximately 440 pages of printed material provided to ARRL, all or part of 18 pages were redacted as tentative or partial data or staff analysis or discussion of policy options, none of which was relied on by the Commission in making its decision. All relevant final data were disclosed.

ARRL's argument provides no basis to challenge the Commission's characterization of the portions of the documents that were not disclosed.³⁵ ARRL speculates, without any basis, that since it "seems more likely [that] the Commission actually considered and rejected the information contained in the redacted portions of its studies, then it had a duty to disclose the information and the reasons for rejecting it." Br. at 34. Assuming solely for purposes of argument that, contrary to the Commission's explanation, the withheld materials are as ARRL describes them, ARRL offers no precedent to support the unusual proposition that when an agency fails to agree with its staff's internal analysis of data in a rule making proceeding, the agency must publicly explain and justify its disagreement. An agency ordinarily need not explain a disagreement even with published staff rulings. *Vernal Enterprises, Inc. v. FCC*, 355 F.3d 650, 660 (D.C. Cir. 2004). There is no basis for a claim that in a rule making proceeding an agency must disclose internal

³⁴ ARRL did not seek Commission review of the staff action insofar as it withheld portions of the records. The Commission's rules expressly provide for the filing of an application for review of staff action denying an FOIA request. *See* 47 C.F.R. 0.461(j); *see also* 47 U.S.C. 47 U.S.C. 155(c)(4)(providing generally for agency review of staff action taken pursuant to delegated authority by filing of an application for review by an aggrieved person).

³⁵ The Commission does not object to submitting the unredacted documents under seal if the Court desires to examine them.

staff analyses of publicly disclosed data, regardless of whether the agency accepts or rejects or ignores the staff analysis.

The Court has held that the “critical factual material that is used to support the agency position on review” must be made available for public comment. *Air Transp. Ass’n v. FAA*, 169 F.3d 1, 7 (D.C.Cir. 1999). ARRL’s claim that under this standard it has a right to review internal staff recommendations is foreclosed by this Court’s recent decision in *Echostar Satellite LLC v. FCC*, 457 F.3d 31, 40 (D.C.Cir. 2006). Rejecting in that case a similar claim for access to staff analysis of data, which the Court described as “the agency staff’s own cogitations upon the evidence in the record,” the Court held that if “parties [were] entitled to comment upon every observation an agency staff member draws from the record as it accrues, rulemaking proceedings would be interminable.” The material that the Commission did not disclose publicly here – “preliminary or partial results or staff opinions that were ... not relied on by the Commission in making its decision” – can hardly be considered “critical factual material” supporting the agency’s decision. None of the cases cited by ARRL supports its contention that an agency is obligated to disclose its staff’s analysis of data in addition to the data itself.

ARRL’s attempt to bootstrap the substantial evidence test into support for the proposition that an agency must make available for public comment every internal document in its entirety that the agency’s staff prepares relating to a rule making proceeding is contrary to the Court’s holding in the *Echostar* opinion and cannot be found in the general language of the cases to which ARRL cites. *See* ARRL Br. at 34 & n. 70 (citing *Universal Camera Corp. v. NLRB*, 340 U.S. 474, 488 (1951); *Ass’n of Data Processing Serv.*

Orgs., Inc. v. Board of Gov. of Fed. Reserve System, 745 F.2d 677, 683-84 (D.C. Cir. 1984)).

ARRL suggests in a footnote that the Commission erred even as to release of the unredacted portions of the documents since parties did not have a chance to comment on this information prior to adoption of the rules. Br. at 33, n.68. The Court has consistently held that an “argument ... found in a single footnote ... is not enough to raise an issue for our review.” *Nstar Elec. & Gas Corp. v. FERC*, 481 F.3d 794, 800 (D.C.Cir. 2007). In any event, ARRL does not even proffer what it might have said in comments based on this information that it did not say, or could not have said, on the basis of the substantial information that was in the record prior to adoption of the *Report & Order*. At most, any claimed error is therefore a harmless one. *See Air Transp. Ass’n v. CAB*, 732 F.2d 219, 224 n.11 (D.C.Cir. 1983)(“Petitioner does not explain what it would have said had it been given earlier access to the staff studies. Under such circumstances, any error generally would be found harmless.”).

CONCLUSION

For the foregoing reasons, the Court should deny the petition for review.

Respectfully submitted,

Thomas O. Barnett
Assistant Attorney General

Samuel L. Feder
General Counsel

Robert B. Nicholson
Robert J. Wiggers
Attorneys

Joseph R. Palmore
Deputy General Counsel

United States Department of Justice
Washington, D. C. 20530

Richard K. Welch
Associate General Counsel

John E. Ingle
Deputy Associate General Counsel

C. Grey Pash, Jr.
Counsel

Federal Communications Commission
Washington, D. C. 20554
(202) 418-1740
Fax (202) 418-2819

August 21, 2007

**In The
UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT**

AMERICAN RADIO RELAY LEAGUE, INC.,)	
PETITIONER)	
)	
v.)	No. 06-1343
)	
FEDERAL COMMUNICATIONS COMMISSION)	
AND THE UNITED STATES OF AMERICA)	
RESPONDENTS)	

CERTIFICATE OF COMPLIANCE

Pursuant to the requirements of Fed. R. App. P. 32(a)(7) and D.C. Cir. Rule 32(a)(2), I hereby certify that the accompanying “Brief for Respondents” in the captioned case contains **13714** words as measured by the word count function of Microsoft Office Word 2003.

C. Grey Pash, Jr.

August 21, 2007

STATUTORY APPENDIX

5 USC § 553.....	2
5 USC § 706.....	3
28 USC § 2342.....	3
47 USC § 155(c)	4
47 USC § 157(note)[Section 706, Telecommunications Act of 1996]	6
47 USC § 301.....	6
47 USC § 302a(a)	7
47 USC § 402(a)	7
47 USC § 405(a)	7
47 CFR § 0.461(j)	8
47 CFR § 2.1(c).....	8
47 CFR § 15.1	9
47 CFR § 15.3.....	9
47 CFR § 15.5.....	10
47 CFR § 15.31	10
47 CFR § 15.33.....	14
47 CFR § 15.101	15
47 CFR § 15.107	16
47 CFR § 15.109.....	17
47 CFR § 15.201	19
47 CFR § 15.207	20
47 CFR § 15.209.....	20
47 CFR § 15.221	21
47 CFR § 15.611.....	22

5 USC § 553

(a) This section applies, according to the provisions thereof, except to the extent that there is involved--

- (1) a military or foreign affairs function of the United States; or
- (2) a matter relating to agency management or personnel or to public property, loans, grants, **benefits**, or contracts.

(b) General notice of proposed rule making shall be published in the Federal Register, unless persons subject thereto are named and either personally served or otherwise have actual notice thereof in accordance with law. The notice shall include--

- (1) a statement of the time, place, and nature of public rule making proceedings;
- (2) reference to the legal authority under which the rule is proposed; and
- (3) either the terms or substance of the proposed rule or a description of the subjects and issues involved.

Except when notice or hearing is required by statute, this subsection does not apply--

(A) to interpretative rules, general statements of policy, or rules of agency organization, procedure, or practice; or

(B) when the agency for good cause finds (and incorporates the finding and a brief statement of reasons therefor in the rules issued) that notice and public procedure thereon are impracticable, unnecessary, or contrary to the public interest.

(c) After notice required by this section, the agency shall give interested persons an opportunity to participate in the rule making through submission of written data, views, or arguments with or without opportunity for oral presentation. After consideration of the relevant matter presented, the agency shall incorporate in the rules adopted a concise general statement of their basis and purpose. When rules are required by statute to be made on the record after opportunity for an agency hearing, sections 556 and 557 of this title apply instead of this subsection.

(d) The required publication or service of a substantive rule shall be made not less than 30 days before its effective date, except--

- (1) a substantive rule which grants or recognizes an exemption or relieves a restriction;
 - (2) interpretative rules and statements of policy; or
 - (3) as otherwise provided by the agency for good cause found and published with the rule.
- (e) Each agency shall give an interested person the right to petition for the issuance, amendment,

or repeal of a rule.

5 USC § 706

To the extent necessary to decision and when presented, the reviewing court shall decide all relevant questions of law, interpret constitutional and statutory provisions, and determine the meaning or applicability of the terms of an agency action. The reviewing court shall--

- (1) compel agency action unlawfully withheld or unreasonably delayed; and
- (2) hold unlawful and set aside agency action, findings, and conclusions found to be--
 - (A) arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law;
 - (B) contrary to constitutional right, power, privilege, or immunity;
 - (C) in excess of statutory jurisdiction, authority, or limitations, or short of statutory right;
 - (D) without observance of procedure required by law;
 - (E) unsupported by substantial evidence in a case subject to sections 556 and 557 of this title or otherwise reviewed on the record of an agency hearing provided by statute; or
 - (F) unwarranted by the facts to the extent that the facts are subject to trial de novo by the reviewing court.

In making the foregoing determinations, the court shall review the whole record or those parts of it cited by a party, and due account shall be taken of the rule of prejudicial error.

28 USC § 2342

The court of appeals (other than the United States Court of Appeals for the Federal Circuit) has exclusive jurisdiction to enjoin, set aside, suspend (in whole or in part), or to determine the validity of--

- (1) all final orders of the Federal Communications Commission made reviewable by section 402(a) of title 47;
- (2) all final orders of the Secretary of Agriculture made under chapters 9 and 20A of title 7, except orders issued under sections 210(e), 217a, and 499g(a) of title 7;
- (3) all rules, regulations, or final orders of--
 - (A) the Secretary of Transportation issued pursuant to section 50501, 50502, 56101-56104, or 57109 of title 46 or pursuant to part B or C of subtitle IV, subchapter III of chapter 311, chapter 313, or chapter 315 of title 49; and

(B) the Federal Maritime Commission issued pursuant to section 305, 41304, 41308, or 41309 or chapter 421 or 441 of title 46;

(4) all final orders of the Atomic Energy Commission made reviewable by section 2239 of title 42;

(5) all rules, regulations, or final orders of the Surface Transportation Board made reviewable by section 2321 of this title;

(6) all final orders under section 812 of the Fair Housing Act; and

(7) all final agency actions described in section 20114(c) of title 49.

Jurisdiction is invoked by filing a petition as provided by section 2344 of this title.

47 USC § 155(c)

(c) Delegation of functions; exceptions to initial orders; force, effect and enforcement of orders; administrative and judicial review; qualifications and compensation of delegates; assignment of cases; separation of review and investigative or prosecuting functions; secretary; seal

(1) When necessary to the proper functioning of the Commission and the prompt and orderly conduct of its business, the Commission may, by published rule or by order, delegate any of its functions (except functions granted to the Commission by this paragraph and by paragraphs (4), (5), and (6) of this subsection and except any action referred to in sections 204(a)(2), 208(b), and 405(b) of this title) to a panel of commissioners, an individual commissioner, an employee board, or an individual employee, including functions with respect to hearing, determining, ordering, certifying, reporting, or otherwise acting as to any work, business, or matter; except that in delegating review functions to employees in cases of adjudication (as defined in section 551 of Title 5), the delegation in any such case may be made only to an employee board consisting of two or more employees referred to in paragraph (8) of this subsection. Any such rule or order may be adopted, amended, or rescinded only by a vote of a majority of the members of the Commission then holding office. Except for cases involving the authorization of service in the instructional television fixed service, or as otherwise provided in this chapter, nothing in this paragraph shall authorize the Commission to provide for the conduct, by any person or persons other than persons referred to in paragraph (2) or (3) of section 556(b) of Title 5, of any hearing to which such section applies.

(2) As used in this subsection the term "order, decision, report, or action" does not include an initial, tentative, or recommended decision to which exceptions may be filed as provided in section 409(b) of this title.

(3) Any order, decision, report, or action made or taken pursuant to any such delegation, unless reviewed as provided in paragraph (4) of this subsection, shall have the same force and effect, and shall be made, evidenced, and enforced in the same manner, as orders, decisions, reports, or

other actions of the Commission.

(4) Any person aggrieved by any such order, decision, report or action may file an application for review by the Commission within such time and in such manner as the Commission shall prescribe, and every such application shall be passed upon by the Commission. The Commission, on its own initiative, may review in whole or in part, at such time and in such manner as it shall determine, any order, decision, report, or action made or taken pursuant to any delegation under paragraph (1) of this subsection.

(5) In passing upon applications for review, the Commission may grant, in whole or in part, or deny such applications without specifying any reasons therefor. No such application for review shall rely on questions of fact or law upon which the panel of commissioners, individual commissioner, employee board, or individual employee has been afforded no opportunity to pass.

(6) If the Commission grants the application for review, it may affirm, modify, or set aside the order, decision, report, or action, or it may order a rehearing upon such order, decision, report, or action in accordance with section 405 of this title.

(7) The filing of an application for review under this subsection shall be a condition precedent to judicial review of any order, decision, report, or action made or taken pursuant to a delegation under paragraph (1) of this subsection. The time within which a petition for review must be filed in a proceeding to which section 402(a) of this title applies, or within which an appeal must be taken under section 402(b) of this title, shall be computed from the date upon which public notice is given of orders disposing of all applications for review filed in any case.

(8) The employees to whom the Commission may delegate review functions in any case of adjudication (as defined in section 551 of Title 5) shall be qualified, by reason of their training, experience, and competence, to perform such review functions, and shall perform no duties inconsistent with such review functions. Such employees shall be in a grade classification or salary level commensurate with their important duties, and in no event less than the grade classification or salary level of the employee or employees whose actions are to be reviewed. In the performance of such review functions such employees shall be assigned to cases in rotation so far as practicable and shall not be responsible to or subject to the supervision or direction of any officer, employee, or agent engaged in the performance of investigative or prosecuting functions for any agency.

(9) The secretary and seal of the Commission shall be the secretary and seal of each panel of the Commission, each individual commissioner, and each employee board or individual employee exercising functions delegated pursuant to paragraph (1) of this subsection.

47 USC § 157 (Note)

Advanced Telecommunications Incentives

Pub.L. 104-104, Title VII, § 706, Feb. 8, 1996, 110 Stat. 153, as amended Pub.L. 107-110, § 1076(gg), Jan. 8, 2002, 115 Stat. 2093, provided that:

"(a) In general.--The Commission and each State commission with regulatory jurisdiction over telecommunications services shall encourage the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans (including, in particular, elementary and secondary schools and classrooms) by utilizing, in a manner consistent with the public interest, convenience, and necessity, price cap regulation, regulatory forbearance, measures that promote competition in the local telecommunications market, or other regulating methods that remove barriers to infrastructure investment.

"(b) Inquiry.--The Commission shall, within 30 months after the date of enactment of this Act [Feb. 8, 1996], and regularly thereafter, initiate a notice of inquiry concerning the availability of advanced telecommunications capability to all Americans (including, in particular, elementary and secondary schools and classrooms) and shall complete the inquiry within 180 days after its initiation. In the inquiry, the Commission shall determine whether advanced telecommunications capability is being deployed to all Americans in a reasonable and timely fashion. If the Commission's determination is negative, it shall take immediate action to accelerate deployment of such capability by removing barriers to infrastructure investment and by promoting competition in the telecommunications market.

"(c) Definitions.--For purposes of this subsection:

"(1) Advanced telecommunications capability.--The term 'advanced telecommunications capability' is defined, without regard to any transmission media or technology, as high-speed, switched, broadband telecommunications capability that enables users to originate and receive high-quality voice, data, graphics, and video telecommunications using any technology.

"(2) Elementary and secondary schools.--The term 'elementary and secondary schools' means elementary and secondary schools, as defined in section 9101 of the Elementary and Secondary Education Act of 1965 [20 U.S.C.A. § 7801]."

47 USC § 301

It is the purpose of this chapter, among other things, to maintain the control of the United States over all the channels of radio transmission; and to provide for the use of such channels, but not the ownership thereof, by persons for limited periods of time, under licenses granted by Federal authority, and no such license shall be construed to create any right, beyond the terms, conditions, and periods of the license. No person shall use or operate any apparatus for the transmission of energy or communications or signals by radio (a) from one place in any State, Territory, or possession of the United States or in the District of Columbia to another place in the same State, Territory, possession, or District; or (b) from any State, Territory, or possession of

the United States, or from the District of Columbia to any other State, Territory, or possession of the United States; or (c) from any place in any State, Territory, or possession of the United States, or in the District of Columbia, to any place in any foreign country or to any vessel; or (d) within any State when the effects of such use extend beyond the borders of said State, or when interference is caused by such use or operation with the transmission of such energy, communications, or signals from within said State to any place beyond its borders, or from any place beyond its borders to any place within said State, or with the transmission or reception of such energy, communications, or signals from and/or to places beyond the borders of said State; or (e) upon any vessel or aircraft of the United States (except as provided in section 303(t) of this title); or (f) upon any other mobile stations within the jurisdiction of the United States, except under and in accordance with this chapter and with a license in that behalf granted under the provisions of this chapter.

47 USC § 302a(a)

The Commission may, consistent with the public interest, convenience, and necessity, make reasonable regulations (1) governing the interference potential of devices which in their operation are capable of emitting radio frequency energy by radiation, conduction, or other means in sufficient degree to cause harmful interference to radio communications; and (2) establishing minimum performance standards for home electronic equipment and systems to reduce their susceptibility to interference from radio frequency energy. Such regulations shall be applicable to the manufacture, import, sale, offer for sale, or shipment of such devices and home electronic equipment and systems, and to the use of such devices.

47 USC § 402(a)

Any proceeding to enjoin, set aside, annul, or suspend any order of the Commission under this chapter (except those appealable under subsection (b) of this section) shall be brought as provided by and in the manner prescribed in chapter 158 of Title 28.

47 USC 405(a)

(a) After an order, decision, report, or action has been made or taken in any proceeding by the Commission, or by any designated authority within the Commission pursuant to a delegation under section 155(c)(1) of this title, any party thereto, or any other person aggrieved or whose interests are adversely affected thereby, may petition for reconsideration only to the authority making or taking the order, decision, report, or action; and it shall be lawful for such authority, whether it be the Commission or other authority designated under section 155(c)(1) of this title, in its discretion, to grant such a reconsideration if sufficient reason therefor be made to appear. A petition for reconsideration must be filed within thirty days from the date upon which public notice is given of the order, decision, report, or action complained of. No such application shall excuse any person from complying with or obeying any order, decision, report, or action of the Commission, or operate in any manner to stay or postpone the enforcement thereof, without the special order of the Commission. The filing of a petition for reconsideration shall not be a

condition precedent to judicial review of any such order, decision, report, or action, except where the party seeking such review (1) was not a party to the proceedings resulting in such order, decision, report, or action, or (2) relies on questions of fact or law upon which the Commission, or designated authority within the Commission, has been afforded no opportunity to pass. The Commission, or designated authority within the Commission, shall enter an order, with a concise statement of the reasons therefor, denying a petition for reconsideration or granting such petition, in whole or in part, and ordering such further proceedings as may be appropriate: Provided, That in any case where such petition relates to an instrument of authorization granted without a hearing, the Commission, or designated authority within the Commission, shall take such action within ninety days of the filing of such petition. Reconsiderations shall be governed by such general rules as the Commission may establish, except that no evidence other than newly discovered evidence, evidence which has become available only since the original taking of evidence, or evidence which the Commission or designated authority within the Commission believes should have been taken in the original proceeding shall be taken on any reconsideration. The time within which a petition for review must be filed in a proceeding to which section 402(a) of this title applies, or within which an appeal must be taken under section 402(b) of this title in any case, shall be computed from the date upon which the Commission gives public notice of the order, decision, report, or action complained of.

47 CFR § 0.461(j)

(j) Except as provided in paragraph (i) of this section, an application for review of an initial action on a request for inspection may be filed only by the person who made the request. The application shall be filed within 30 days after the date of the written ruling by the custodian of records, and shall be captioned, "Review of Freedom of Information Action." The envelope (if any) shall also be so captioned. The application shall be delivered or mailed to the General Counsel and shall be served on the person (if any) who originally submitted the materials to the Commission. That person may file a response within 10 working days after the application for review is filed. If the records are made available on review, the person who submitted them to the Commission (if any) will be afforded 10 working days after the date of the written ruling to seek a judicial stay. See paragraph (i) of this section. The first day to be counted in computing the time period for filing the application for review or seeking a judicial stay is the day after the date of the written ruling. (For general procedures relating to applications for review, see § 1.115 of this chapter.)

47 CFR § 2.1(c)

...

Harmful Interference. Interference which endangers the functioning of a radionavigation service or of other safety services or seriously degrades, obstructs, or repeatedly interrupts a radiocommunication service operating in accordance with [the ITU] Radio Regulations. (CS)

...

47 CFR § 15.1

(a) This part sets out the regulations under which an intentional, unintentional, or incidental radiator may be operated without an individual license. It also contains the technical specifications, administrative requirements and other conditions relating to the marketing of Part 15 devices.

(b) The operation of an intentional or unintentional radiator that is not in accordance with the regulations in this part must be licensed pursuant to the provisions of section 301 of the Communications Act of 1934, as amended, unless otherwise exempted from the licensing requirements elsewhere in this chapter.

(c) Unless specifically exempted, the operation or marketing of an intentional or unintentional radiator that is not in compliance with the administrative and technical provisions in this part, including prior Commission authorization or verification, as appropriate, is prohibited under section 302 of the Communications Act of 1934, as amended, and Subpart I of Part 2 of this chapter. The equipment authorization and verification procedures are detailed in Subpart J of Part 2 of this chapter.

47 CFR § 15.3

...

(f) Carrier current system. A system, or part of a system, that transmits radio frequency energy by conduction over the electric power lines. A carrier current system can be designed such that the signals are received by conduction directly from connection to the electric power lines (unintentional radiator) or the signals are received over-the-air due to radiation of the radio frequency signals from the electric power lines (intentional radiator).

...

(m) Harmful interference. Any emission, radiation or induction that endangers the functioning of a radio navigation service or of other safety services or seriously degrades, obstructs or repeatedly interrupts a radiocommunications service operating in accordance with this chapter.

...

(ff) Access Broadband over Power Line (Access BPL). A carrier current system installed and operated on an electric utility service as an unintentional radiator that sends radio frequency energy on frequencies between 1.705 MHz and 80 MHz over medium voltage lines or over low voltage lines to provide broadband communications and is located on the supply side of the utility service's points of interconnection with customer premises. Access BPL does not include power line carrier systems as defined in § 15.3(t) or In-House BPL as defined in § 15.3(gg).

....

47 CFR § 15.5

(a) Persons operating intentional or unintentional radiators shall not be deemed to have any vested or recognizable right to continued use of any given frequency by virtue of prior registration or certification of equipment, or, for power line carrier systems, on the basis of prior notification of use pursuant to § 90.63(g) of this chapter.

(b) Operation of an intentional, unintentional, or incidental radiator is subject to the conditions that no harmful interference is caused and that interference must be accepted that may be caused by the operation of an authorized radio station, by another intentional or unintentional radiator, by industrial, scientific and medical (ISM) equipment, or by an incidental radiator.

(c) The operator of a radio frequency device shall be required to cease operating the device upon notification by a Commission representative that the device is causing harmful interference. Operation shall not resume until the condition causing the harmful interference has been corrected.

(d) Intentional radiators that produce Class B emissions (damped wave) are prohibited.

47 CFR § 15.31

(a) The following measurement procedures are used by the Commission to determine compliance with the technical requirements in this part. Except where noted, copies of these procedures are available from the Commission's current duplicating contractor whose name and address are available from the Commission's Consumer and Governmental Affairs Bureau at 1-888-CALL-FCC (1- 888-225-5322).

(1) FCC/OET MP-2: Measurement of UHF Noise Figures of TV Receivers.

(2) Unlicensed Personal Communication Service (UPCS) devices are to be measured for compliance using ANSI C63.17-1998: "Methods of Measurement of the Electromagnetic and Operational Compatibility of Unlicensed Personal Communications Services (UPCS) Devices", (incorporated by reference, see § 15.38). This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51.

(3) Other intentional and unintentional radiators are to be measured for compliance using the following procedure excluding sections 4.1.5.2, 5.7, 9 and 14: ANSI C63.4-2003: "Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz" (incorporated by reference, see § 15.38). This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51.

Note to Paragraph (a)(3): Digital devices tested to show compliance with the provisions of § § 15.107(e) and 15.109(g) must be tested following the ANSI C63.4 procedure described in paragraph (a)(3) of this section.

(b) All parties making compliance measurements on equipment subject to the requirements of this part are urged to use these measurement procedures. Any party using other procedures should ensure that such other procedures can be relied on to produce measurement results compatible with the FCC measurement procedures. The description of the measurement procedure used in testing the equipment for compliance and a list of the test equipment actually employed shall be made part of an application for certification or included with the data required to be retained by the party responsible for devices authorized pursuant to a Declaration of Conformity or devices subject to verification.

(c) For swept frequency equipment, measurements shall be made with the frequency sweep stopped at those frequencies chosen for the measurements to be reported.

(d) Field strength measurements shall be made, to the extent possible, on an open field site. Test sites other than open field sites may be employed if they are properly calibrated so that the measurement results correspond to what would be obtained from an open field site. In the case of equipment for which measurements can be performed only at the installation site, such as perimeter protection systems, carrier current systems, and systems employing a "leaky" coaxial cable as an antenna, measurements for verification or for obtaining a grant of equipment authorization shall be performed at a minimum of three installations that can be demonstrated to be representative of typical installation sites.

(e) For intentional radiators, measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage. For battery operated equipment, the equipment tests shall be performed using a new battery.

(f) To the extent practicable, the device under test shall be measured at the distance specified in the appropriate rule section. The distance specified corresponds to the horizontal distance between the measurement antenna and the closest point of the equipment under test, support equipment or interconnecting cables as determined by the boundary defined by an imaginary straight line periphery describing a simple geometric configuration enclosing the system containing the equipment under test. The equipment under test, support equipment and any interconnecting cables shall be included within this boundary.

(1) At frequencies at or above 30 MHz, measurements may be performed at a distance other than what is specified provided: measurements are not made in the near field except where it can be shown that near field measurements are appropriate due to the characteristics of the device; and it can be demonstrated that the signal levels needed to be measured at the distance employed can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 meters unless it can be further demonstrated that measurements at a distance of 30 meters or less are impractical. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse linear-distance for field strength measurements; inverse-linear-distance-squared for power density measurements).

(2) At frequencies below 30 MHz, measurements may be performed at a distance closer than that

specified in the regulations; however, an attempt should be made to avoid making measurements in the near field. Pending the development of an appropriate measurement procedure for measurements performed below 30 MHz, when performing measurements at a closer distance than specified, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade).

(3) The applicant for a grant of certification shall specify the extrapolation method used in the application filed with the Commission. For equipment subject to Declaration of Conformity or verification, this information shall be retained with the measurement data.

(4) When measurement distances of 30 meters or less are specified in the regulations, the Commission will test the equipment at the distance specified unless measurement at that distance results in measurements being performed in the near field. When measurement distances of greater than 30 meters are specified in the regulations, the Commission will test the equipment at a closer distance, usually 30 meters, extrapolating the measured field strength to the specified distance using the methods shown in this section.

(5) Measurements shall be performed at a sufficient number of radials around the equipment under test to determine the radial at which the field strength values of the radiated emissions are maximized. The maximum field strength at the frequency being measured shall be reported in the equipment authorization report. This paragraph shall not apply to Access BPL equipment on overhead medium voltage lines. In lieu thereof, the measurement guidelines established by the Commission for Access BPL shall be followed.

(g) Equipment under test shall be adjusted, using those controls that are readily accessible to or are intended to be accessible to the consumer, in such a manner as to maximize the level of the emissions. For those devices to which wire leads may be attached by the consumer, tests shall be performed with wire leads attached. The wire leads shall be of the length to be used with the equipment if that length is known. Otherwise, wire leads one meter in length shall be attached to the equipment. Longer wire leads may be employed if necessary to interconnect to associated peripherals.

(h) For a composite system that incorporates devices contained either in a single enclosure or in separate enclosures connected by wire or cable, testing for compliance with the standards in this Part shall be performed with all of the devices in the system functioning. If an intentional radiator incorporates more than one antenna or other radiating source and these radiating sources are designed to emit at the same time, measurements of conducted and radiated emissions shall be performed with all radiating sources that are to be employed emitting. A device which incorporates a carrier current system shall be tested as if the carrier current system were incorporated in a separate device; that is, the device shall be tested for compliance with whatever rules would apply to the device were the carrier current system not incorporated, and the carrier current system shall be tested for compliance with the rules applicable to carrier current systems.

(i) If the device under test provides for the connection of external accessories, including external

electrical input signals, the device shall be tested with the accessories attached. The device under test shall be fully exercised with these external accessories. The emission tests shall be performed with the device and accessories configured in a manner that tends to produce maximized emissions within the range of variations that can be expected under normal operating conditions. In the case of multiple accessory external ports, an external accessory shall be connected to one of each type of port. Only one test using peripherals or external accessories that are representative of the devices that will be employed with the equipment under test is required. All possible equipment combinations do not need to be tested. The accessories or peripherals connected to the device being tested shall be unmodified, commercially available equipment.

(j) If the equipment under test consists of a central control unit and an external or internal accessory(ies) (peripheral) and the party verifying the equipment or applying for a grant of equipment authorization manufactures or assembles the central control unit and at least one of the accessory devices that can be used with that control unit, testing of the control unit and/or the accessory(ies) must be performed using the devices manufactured or assembled by that party, in addition to any other needed devices which the party does not manufacture or assemble. If the party verifying the equipment or applying for a grant of equipment authorization does not manufacture or assemble the central control unit and at least one of the accessory devices that can be used with that control unit or the party can demonstrate that the central control unit or accessory(ies) normally would be marketed or used with equipment from a different entity, testing of the central control unit and/or the accessory(ies) must be performed using the specific combination of equipment which is intended to be marketed or used together. Only one test using peripherals or accessories that are representative of the devices that will be employed with the equipment under test is required. All possible equipment combinations are not required to be tested. The accessories or peripherals connected to the device being tested shall be unmodified, commercially available equipment.

(k) A composite system is a system that incorporates different devices contained either in a single enclosure or in separate enclosures connected by wire or cable. If the individual devices in a composite system are subject to different technical standards, each such device must comply with its specific standards. In no event may the measured emissions of the composite system exceed the highest level permitted for an individual component. For digital devices which consist of a combination of Class A and Class B devices, the total combination of which results in a Class A digital device, it is only necessary to demonstrate that the equipment combination complies with the limits for a Class A device. This equipment combination may not be employed for obtaining a grant of equipment authorization or verifying a Class B digital device. However, if the digital device combination consists of a Class B central control unit, e.g., a personal computer, and a Class A internal peripheral(s), it must be demonstrated that the Class B central control unit continues to comply with the limits for a Class B digital device with the Class A internal peripheral(s) installed but not active.

(l) Measurements of radio frequency emissions conducted to the public utility power lines shall be performed using a 50 ohm/50 muH line-impedance stabilization network (LISN).

Note: Receivers tested under the transition provisions contained in § 15.37 may be tested with a 50 ohm/5 muH LISN.

(m) Measurements on intentional radiators or receivers, other than TV broadcast receivers, shall be performed and, if required, reported for each band in which the device can be operated with the device operating at the number of frequencies in each band specified in the following table:

[table omitted]

(n) Measurements on TV broadcast receivers shall be performed with the receiver tuned to each VHF frequency and also shall include the following oscillator frequencies: 520, 550, 600, 650, 700, 750, 800, 850, 900 and 931 MHz. If measurements cannot be made on one or more of the latter UHF frequencies because of the presence of signals from licensed radio stations or for other reasons to be detailed in the measurement report, measurements shall be made with the receiver oscillator at a nearby frequency. If the receiver is not capable of receiving channels above 806 MHz, the measurements employing the oscillator frequencies 900 and 931 MHz may be omitted.

(o) The amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators which are attenuated more than 20 dB below the permissible value need not be reported unless specifically required elsewhere in this part.

(p) In those cases where the provisions in this section conflict with the measurement procedures in paragraph (a) of this section and the procedures were implemented after June 23, 1989, the provisions contained in the measurement procedures shall take precedence.

47 CFR § 15.33

(b) For unintentional radiators:

(1) Except as otherwise indicated in paragraphs (b)(2) or (b)(3) of this section, for an unintentional radiator, including a digital device, the spectrum shall be investigated from the lowest radio frequency signal generated or used in the device, without going below the lowest frequency for which a radiated emission limit is specified, up to the frequency shown in the following table:

[table omitted]

(2) A unintentional radiator, excluding a digital device, in which the highest frequency generated in the device, the highest frequency used in the device and the highest frequency on which the device operates or tunes are less than 30 MHz and which, in accordance with § 15.109, is required to comply with standards on the level of radiated emissions within the frequency range 9 kHz to 30 MHz, such as a CB receiver or a device designed to conduct its radio frequency emissions via connecting wires or cables, e.g., a carrier current system not intended to radiate, shall be investigated from the lowest radio frequency generated or used in the device, without going below 9 kHz (25 MHz for CB receivers), up to the frequency shown in the following table. If the unintentional radiator contains a digital device, the upper frequency to be investigated shall be that shown in the table below or in the table in paragraph (b)(1) of this section, as based on both the highest frequency generated and the highest frequency used in the digital device,

whichever range is higher.

[table omitted]

(3) Except for a CB receiver, a receiver employing superheterodyne techniques shall be investigated from 30 MHz up to at least the second harmonic of the highest local oscillator frequency generated in the device. If such receiver is controlled by a digital device, the frequency range shall be investigated up to the higher of the second harmonic of the highest local oscillator frequency generated in the device or the upper frequency of the measurement range specified for the digital device in paragraph (b)(1) of this section.

47 CFR § 15.101

(a) Except as otherwise exempted in § § 15.23, 15.103, and 15.113, unintentional radiators shall be authorized prior to the initiation of marketing, as follows:

[table omitted]

(b) Only those receivers that operate (tune) within the frequency range of 30- 960 MHz, CB receivers and radar detectors are subject to the authorizations shown in paragraph (a) of this section. However, receivers indicated as being subject to Declaration of Conformity that are contained within a transceiver, the transmitter portion of which is subject to certification, shall be authorized under the verification procedure. Receivers operating above 960 MHz or below 30 MHz, except for radar detectors and CB receivers, are exempt from complying with the technical provisions of this part but are subject to § 15.5.

(c) Personal computers shall be authorized in accordance with one of the following methods:

(1) The specific combination of CPU board, power supply and enclosure is tested together and authorized under a Declaration of Conformity or a grant of certification;

(2) The personal computer is authorized under a Declaration of Conformity or a grant of certification, and the CPU board or power supply in that computer is replaced with a CPU board or power supply that has been separately authorized under a Declaration of Conformity or a grant of certification; or

(3) The CPU board and power supply used in the assembly of a personal computer have been separately authorized under a Declaration of Conformity or a grant of certification; and

(4) Personal computers assembled using either of the methods specified in paragraphs (c)(2) or (c)(3) of this section must, by themselves, also be authorized under a Declaration of Conformity if they are marketed. However, additional testing is not required for this Declaration of Conformity, provided the procedures in § 15.102(b) are followed.

(d) Peripheral devices, as defined in § 15.3(r), shall be authorized under a Declaration of Conformity, or a grant of certification, or verified, as appropriate, prior to marketing. Regardless of the provisions of paragraphs (a) or (c) of this section, if a CPU board, power supply, or

peripheral device will always be marketed with a specific personal computer, it is not necessary to obtain a separate authorization for that product provided the specific combination of personal computer, peripheral device, CPU board and power supply has been authorized under a Declaration of Conformity or a grant of certification as a personal computer.

(1) No authorization is required for a peripheral device or a subassembly that is sold to an equipment manufacturer for further fabrication; that manufacturer is responsible for obtaining the necessary authorization prior to further marketing to a vendor or to a user.

(2) Power supplies and CPU boards that have not been separately authorized and are designed for use with personal computers may be imported and marketed only to a personal computer equipment manufacturer that has indicated, in writing, to the seller or importer that they will obtain a Declaration of Conformity or a grant of certification for the personal computer employing these components.

(e) Subassemblies to digital devices are not subject to the technical standards in this part unless they are marketed as part of a system in which case the resulting system must comply with the applicable regulations. Subassemblies include:

(1) Devices that are enclosed solely within the enclosure housing the digital device, except for: power supplies used in personal computers; devices included under the definition of a peripheral device in § 15.3(r); and personal computer CPU boards, as defined in § 15.3(bb);

(2) CPU boards, as defined in § 15.3(bb), other than those used in personal computers, that are marketed without an enclosure or power supply; and

(3) Switching power supplies that are separately marketed and are solely for use internal to a device other than a personal computer.

(f) The procedures for obtaining a grant of certification or notification and for verification and a Declaration of Conformity are contained in subpart J of part 2 of this chapter.

47 CFR § 15.107

(a) Except for Class A digital devices, for equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 µH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the band edges.

[table omitted]

(b) For a Class A digital device that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency

or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μ H/50 ohms LISN. Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

[table omitted]

(c) The limits shown in paragraphs (a) and (b) of this section shall not apply to carrier current systems operating as unintentional radiators on frequencies below 30 MHz. In lieu thereof, these carrier current systems shall be subject to the following standards:

(1) For carrier current systems containing their fundamental emission within the frequency band 535-1705 kHz and intended to be received using a standard AM broadcast receiver: no limit on conducted emissions.

(2) For all other carrier current systems: 1000 μ V within the frequency band 535-1705 kHz, as measured using a 50 μ H/50 ohms LISN.

(3) Carrier current systems operating below 30 MHz are also subject to the radiated emission limits in § 15.109(e).

(d) Measurements to demonstrate compliance with the conducted limits are not required for devices which only employ battery power for operation and which do not operate from the AC power lines or contain provisions for operation while connected to the AC power lines. Devices that include, or make provision for, the use of battery chargers which permit operating while charging, AC adaptors or battery eliminators or that connect to the AC power lines indirectly, obtaining their power through another device which is connected to the AC power lines, shall be tested to demonstrate compliance with the conducted limits.

47 CFR § 15.109

(a) Except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

[table omitted]

(b) The field strength of radiated emissions from a Class A digital device, as determined at a distance of 10 meters, shall not exceed the following:

[table omitted]

(c) In the emission tables above, the tighter limit applies at the band edges. Sections 15.33 and 15.35 which specify the frequency range over which radiated emissions are to be measured and the detector functions and other measurement standards apply.

(d) For CB receivers, the field strength of radiated emissions within the frequency range of 25-30 MHz shall not exceed 40 microvolts/meter at a distance of 3 meters. The field strength of radiated emissions above 30 MHz from such devices shall comply with the limits in paragraph (a) of this section.

(e) Carrier current systems used as unintentional radiators or other unintentional radiators that are designed to conduct their radio frequency emissions via connecting wires or cables and that operate in the frequency range of 9 kHz to 30 MHz, including devices that deliver the radio frequency energy to transducers, such as ultrasonic devices not covered under part 18 of this Chapter, shall comply with the radiated emission limits for intentional radiators provided in § 15.209 for the frequency range of 9 kHz to 30 MHz. As an alternative, carrier current systems used as unintentional radiators and operating in the frequency range of 525 kHz to 1705 kHz may comply with the radiated emission limits provided in § 15.221(a). At frequencies above 30 MHz, the limits in paragraph (a), (b) or (g) of this section, as appropriate, continue to apply.

(f) For a receiver which employs terminals for the connection of an external receiving antenna, the receiver shall be tested to demonstrate compliance with the provisions of this section with an antenna connected to the antenna terminals unless the antenna conducted power is measured as specified in § 15.111(a). If a permanently attached receiving antenna is used, the receiver shall be tested to demonstrate compliance with the provisions of this section.

(g) As an alternative to the radiated emission limits shown in paragraphs (a) and (b) of this section, digital devices may be shown to comply with the standards contained in Third Edition of the International Special Committee on Radio Interference (CISPR), Pub. 22, "Information Technology Equipment--Radio Disturbance Characteristics--Limits and Methods of Measurement" (incorporated by reference, see § 15.38). In addition:

(1) The test procedure and other requirements specified in this part shall continue to apply to digital devices.

(2) If, in accordance with § 15.33 of this part, measurements must be performed above 1000 MHz, compliance above 1000 MHz shall be demonstrated with the emission limit in paragraph (a) or (b) of this section, as appropriate. Measurements above 1000 MHz may be performed at the distance specified in the CISPR 22 publications for measurements below 1000 MHz provided the limits in paragraphs (a) and (b) of this section are extrapolated to the new measurement distance using an inverse linear distance extrapolation factor (20 dB/decade), e.g., the radiated limit above 1000 MHz for a Class B digital device is 150 uV/m, as measured at a distance of 10 meters.

(3) The measurement distances shown in CISPR Pub. 22, including measurements made in accordance with this paragraph above 1000 MHz, are considered, for the purpose of § 15.31(f)(4) of this part, to be the measurement distances specified in this part.

(4) If the radiated emissions are measured to demonstrate compliance with the alternative standards in this paragraph, compliance must also be demonstrated with the conducted limits shown in § 15.107(e).

(h) Radar detectors shall comply with the emission limits in paragraph (a) of this section over the frequency range of 11.7-12.2 GHz.

47 CFR § 15.201

(a) Intentional radiators operated as carrier current systems, devices operated under the provisions of §§ 15.211, 15.213, and 15.221, and devices operating below 490 kHz in which all emissions are at least 40 dB below the limits in § 15.209 shall be verified pursuant to the procedures in Subpart J of part 2 of this chapter prior to marketing.

(b) Except as otherwise exempted in paragraph (c) of this section and in § 15.23 of this part, all intentional radiators operating under the provisions of this part shall be certificated by the Commission pursuant to the procedures in Subpart J of Part 2 of this chapter prior to marketing.

(c) For devices such as perimeter protection systems which, in accordance with § 15.31(d), are required to be measured at the installation site, each application for certification must be accompanied by a statement indicating that the system has been tested at three installations and found to comply at each installation. Until such time as certification is granted, a given installation of a system that was measured for the submission for certification will be considered to be in compliance with the provisions of this chapter, including the marketing regulations in Subpart I of Part 2 of this chapter, if tests at that installation show the system to be in compliance with the relevant technical requirements. Similarly, where measurements must be performed on site for equipment subject to verification, a given installation that has been verified to demonstrate compliance with the applicable standards will be considered to be in compliance with the provisions of this chapter, including the marketing regulations in Subpart I of Part 2 of this chapter.

(d) For perimeter protection systems operating in the frequency bands allocated to television broadcast stations operating under Part 73 of this chapter, the holder of the grant of certification must test each installation prior to initiation of normal operation to verify compliance with the technical standards and must maintain a list of all installations and records of measurements. For perimeter protection systems operating outside of the frequency bands allocated to television broadcast stations, upon receipt of a grant of certification, further testing of the same or similar type of system or installation is not required.

47 CFR § 15.207

(a) Except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 μ H/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

[table omitted]

(b) The limit shown in paragraph (a) of this section shall not apply to carrier current systems operating as intentional radiators on frequencies below 30 MHz. In lieu thereof, these carrier current systems shall be subject to the following standards:

(1) For carrier current systems containing their fundamental emission within the frequency band 535-1705 kHz and intended to be received using a standard AM broadcast receiver: no limit on conducted emissions.

(2) For all other carrier current systems: 1000 μ V within the frequency band 535-1705 kHz, as measured using a 50 μ H/50 ohms LISN.

(3) Carrier current systems operating below 30 MHz are also subject to the radiated emission limits in §§ 15.205, 15.209, 15.221, 15.223, 15.225 or 15.227, as appropriate.

(c) Measurements to demonstrate compliance with the conducted limits are not required for devices which only employ battery power for operation and which do not operate from the AC power lines or contain provisions for operation while connected to the AC power lines. Devices that include, or make provision for, the use of battery chargers which permit operating while charging, AC adaptors or battery eliminators or that connect to the AC power lines indirectly, obtaining their power through another device which is connected to the AC power lines, shall be tested to demonstrate compliance with the conducted limits.

47 CFR § 15.209

(a) Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

[table omitted]

(b) In the emission table above, the tighter limit applies at the band edges.

(c) The level of any unwanted emissions from an intentional radiator operating under these general provisions shall not exceed the level of the fundamental emission. For intentional

radiators which operate under the provisions of other sections within this part and which are required to reduce their unwanted emissions to the limits specified in this table, the limits in this table are based on the frequency of the unwanted emission and not the fundamental frequency. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency.

(d) The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

(e) The provisions in § § 15.31, 15.33, and 15.35 for measuring emissions at distances other than the distances specified in the above table, determining the frequency range over which radiated emissions are to be measured, and limiting peak emissions apply to all devices operated under this part.

(f) In accordance with § 15.33(a), in some cases the emissions from an intentional radiator must be measured to beyond the tenth harmonic of the highest fundamental frequency designed to be emitted by the intentional radiator because of the incorporation of a digital device. If measurements above the tenth harmonic are so required, the radiated emissions above the tenth harmonic shall comply with the general radiated emission limits applicable to the incorporated digital device, as shown in § 15.109 and as based on the frequency of the emission being measured, or, except for emissions contained in the restricted frequency bands shown in § 15.205, the limit on spurious emissions specified for the intentional radiator, whichever is the higher limit. Emissions which must be measured above the tenth harmonic of the highest fundamental frequency designed to be emitted by the intentional radiator and which fall within the restricted bands shall comply with the general radiated emission limits in § 15.109 that are applicable to the incorporated digital device.

(g) Perimeter protection systems may operate in the 54-72 MHz and 76-88 MHz bands under the provisions of this section. The use of such perimeter protection systems is limited to industrial, business and commercial applications.

47 CFR § 15.221

(a) Carrier current systems and transmitters employing a leaky coaxial cable as the radiating antenna may operate in the band 525-1705 kHz provided the field strength levels of the radiated emissions do not exceed 15 uV/m, as measured at a distance of 47,715 (frequency in kHz) meters (equivalent to $\Lambda/2\pi$) from the electric power line or the coaxial cable, respectively. The field strength levels of emissions outside this band shall not exceed the general radiated emission limits in § 15.209.

(b) As an alternative to the provisions in paragraph (a) of this section, intentional radiators used for the operation of an AM broadcast station on a college or university campus or on the campus of any other education institution may comply with the following:

(1) On the campus, the field strength of emissions appearing outside of this frequency band shall not exceed the general radiated emission limits shown in § 15.209 as measured from the radiating source. There is no limit on the field strength of emissions appearing within this frequency band, except that the provisions of § 15.5 continue to comply.

(2) At the perimeter of the campus, the field strength of any emissions, including those within the frequency band 525-1705 kHz, shall not exceed the general radiated emission in § 15.209.

(3) The conducted limits specified in § 15.207 apply to the radio frequency voltage on the public utility power lines outside of the campus. Due to the large number of radio frequency devices which may be used on the campus, contributing to the conducted emissions, as an alternative to measuring conducted emissions outside of the campus, it is acceptable to demonstrate compliance with this provision by measuring each individual intentional radiator employed in the system at the point where it connects to the AC power lines.

(c) A grant of equipment authorization is not required for intentional radiators operated under the provisions of this Section. In lieu thereof, the intentional radiator shall be verified for compliance with the regulations in accordance with subpart J of Part 2 of this chapter. This data shall be kept on file at the location of the studio, office or control room associated with the transmitting equipment. In some cases, this may correspond to the location of the transmitting equipment.

(d) For the band 535-1705 kHz, the frequency of operation shall be chosen such that operation is not within the protected field strength contours of licensed AM stations.

47 CFR § 15.611

(a) Conducted emission limits. Access BPL is not subject to the conducted emission limits of § 15.107.

(b) Radiated emission limits.

(1) Medium voltage power lines.

(i) Access BPL systems that operate in the frequency range of 1.705 kHz to 30 MHz over medium voltage power lines shall comply with the radiated emission limits for intentional radiators provided in § 15.209.

(ii) Access BPL systems that operate in the frequency range above 30 MHz over medium voltage power lines shall comply with the radiated emission limits provided in § 15.109(b).

(2) Low voltage power lines. Access BPL systems that operate over low-voltage power lines, including those that operate over low-voltage lines that are connected to the in-building wiring, shall comply with the radiated emission limits provided in § 15.109(a) and (e).

(c) Interference Mitigation and Avoidance.

(1) Access BPL systems shall incorporate adaptive interference mitigation techniques to remotely reduce power and adjust operating frequencies, in order to avoid site-specific, local use of the same spectrum by licensed services. These techniques may include adaptive or "notch" filtering, or complete avoidance of frequencies, or bands of frequencies, locally used by licensed radio operations.

(i) For frequencies below 30 MHz, when a notch filter is used to avoid interference to a specific frequency band, the Access BPL system shall be capable of attenuating emissions within that band to a level at least 20 dB below the applicable part 15 limits.

(ii) For frequencies above 30 MHz, when a notch filter is used to avoid interference to a specific frequency band, the Access BPL system shall be capable of attenuating emissions within that band to a level at least 10 dB below the applicable part 15 limits.

(iii) At locations where an Access BPL operator attenuates radiated emissions from its operations in accordance with the above required capabilities, we will not require that operator to take further actions to resolve complaints of harmful interference to mobile operations.

(2) Access BPL systems shall comply with applicable radiated emission limits upon power-up following a fault condition, or during a start-up operation after a shut-off procedure, by the use of a non-volatile memory, or some other method, to immediately restore previous settings with programmed notches and excluded bands, to avoid time delay caused by the need for manual re-programming during which protected services may be vulnerable.

(3) Access BPL systems shall incorporate a remote-controllable shut-down feature to deactivate, from a central location, any unit found to cause harmful interference, if other interference mitigation techniques do not resolve the interference problem.